DOCUMENT RESUME

ED 346 787 HE 025 605

AUTHOR	Moyer, Kerry L.
TITLE	Pennsylvania and the State System of Higher Education in the 1990s: Demographics and Trends.
INSTITUTION	Pennsylvania State System of Higher Education.
PUB DATE	Apr 92
NOTE	81p.
PUB TYPE	Statistical Data (110) -- Reports - General (140)
EDRS PRICE	MF01/PC04 Plus Postage.
DESCRIPTORS	*Educational Trends; Employment Patterns; Enrollment Trends; Females; *Higher Education; Migration Patterns; *Population Trends; School Demography; Sex Role; Social Change; Sociocultural Patterns; State Aid; *State Colleges; State Government; State Legislation; *State Universities; Trend Analysis
IDENTIFIERS	Pennsylvania; *Pennsylvania State Colleges and Universities

ABSTRACT

This report presents demographics and information on Pennsylvania's state system of higher education and on issues that may influence that system in the 1990s. Following a brief introduction, the first section treats changes in state demographics including migration, minority groups, accelerated aging of the general population, and family housing. A section outlining the changes in the state system of higher education demographics covers human resource trends, enrollment changes, and the changing role of women in society. The next section outlines economic changes including trends in tuition and charges, funding for the state system, future funding from the state legislature, the state's labor force, and employment trends. A look at social changes examines public commitment to education, public responses to social changes, and affirmative action. This is followed by a section presenting a summary of student markets touching on the high school graduate group as well as on increasing postsecondary participation and future possible markets. Major trends are summarized next. The final section looks at operating environments, the state itself, and the threats and opportunities open to the state and the higher education system. Included are a list of members of the Board of Governors for the state system of higher education, 33 tables, and 24 references. (JB)

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PENNSYLVANIA AND THE STATE SYSTEM OF HIGHER EDUCATION IN THE 1990s:

DEMOGRAPHICS AND TRENDS

Pennsylvania
State System of Higher Education

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INTRODUCTION

There are historians who, having studied and documented change over long periods of time, believe the last ten years of each century is a time of significant change--accompanied by unusually high levels of confusion, stress, agitation, and opportunity. While this prediction may or may not be true for the twentieth century, the pace of economic, political, and social change already witnessed during the first two years of the 1990s certainly supports this hypothesis. Hence, if the 1990s continue to produce rapid change, identification of the most powerful forces of change and ability to forecast appropriate outcomes grow more important--and more difficult.

Changes forecast for the 1990s will particularly affect higher education; the economic and population growth experienced since World War II has carried the parallel growth of higher education and its expansion into research, entrepreneurship, comprehensive universities, and graduate and professional studies. Just when most postsecondary institutions in Pennsylvania had reached goals set in the 1970s and 1980s, and just as the higher education participation rate in Pennsylvania reached 60 percent, the economy contracted to severely limit needed growth. Thus, the 1990s may provide difficult times for higher education in Pennsylvania.

Following is a collection of demographics and information which can assist in identifying external forces or producing an environmental scan. This paper can also serve as a reference document ("How many Pennsylvania high school graduates are projected for 2000?) or serve as a discussion catalyst for the study of complex issues (defining quality or value added, increasing diversity, combating poverty, maintaining access, etc.).

CHANGES IN PENNSYLVANIA DEMOGRAPHICS

Population Change and Migration

The Commonwealth population, according to the 1990 census, is 11,881,643. This represents a one-tenth of one percent increase from the 1980 population (11,863,895). Pennsylvania's population has grown by only 16,902 since 1970 (17,748 since 1980) and, if census bureau predictions hold true, Pennsylvania will see virtually no population growth for the last thirty years of this century. By the end of the 1970s Texas had replaced Pennsylvania as the third largest state; in 1987, Florida replaced Pennsylvania as the fourth most populated state.

Population mobility into Pennsylvania remains very low; only 19 percent of the Commonwealth's resident population was born in another state. However, migration from Pennsylvania to other states is expected to continue; in fact, 373,000 citizens left Pennsylvania during the past ten years. Hence, for the 1980-1990 period, Pennsylvania's population increased about 2 percent through births, but the same number of residents (about 2 percent) was lost to outmigration. Most outmigration is attributed to younger, and often better educated, citizens. If the 1990s follow the patterns established in the 1980s--and they very probably will--expect each year in Pennsylvania 166,000 births, 127,000 deaths, and 35,000 individuals leaving the Commonwealth. This produces a net increase of 4,166 residents per year. Thus, the population of Pennsylvania is forecast to increase by about 42,000 between 1990 and 2000. This growth will not be evenly divided across the Commonwealth; the growth in eastern Pennsylvania will be offset by continued decreases in the west. Between 1980 and 1990, fully 9 percent of the population in western Pennsylvania migrated to other states or eastern Pennsylvania.

The 1990 census data reveal a change in migration patterns within Pennsylvania. For the past thirty years, residents migrated from urban areas to more rural areas of the Commonwealth. While migration from urban areas continued in the 1980s, rural residents joined their urban counterparts in moving to suburban centers during the past 10 years. Hence, urban areas (Allegheny, Delaware, Erie, Lackawanna, Philadelphia Counties) continued population losses which began in the 1960s. But rural counties joined these urban areas in the 1980s with population losses approaching 10 percent in Beaver, Cambria, Cameron, Clearfield, Elk, Fayette, McKean, and Venango Counties. The largest cities in Pennsylvania also continued population losses which began in the early 1970s. The greatest number of these mobile residents moved to townships near metropolitan areas--many suburban neighborhoods have seen populations double since 1970. Population growth in the 1980s was limited to those counties with high suburban and rural populations (Adams, Bucks, Chester, Cumberland, Lancaster, Perry, and York Counties serve as best examples). Several areas of Pennsylvania deserve special attention: the northeast counties continue growth at exponential rates (Pike County up 53 percent and Monroe County up 38 percent since 1980) and the southeast corner continues to grow (Chester County up 19 percent, Bucks County up 13 percent, Lancaster County up 17 percent, and Montgomery County up 5 percent). Increasing numbers of Pennsylvania residents are commuting between home and place of business for longer distances than ever before.

Pennsylvania ranks highest in the nation for number of rural residents, according to the 1990 census, however, this distinction may soon be lost to either Texas (3,351,993 rural residents) or North Carolina (3,290,859 rural residents). The Commonwealth's 3,693,348 individuals living in rural areas comprise 31 percent of total population. This represents a 1.4 percent increase over 1980 census figures. As seen in Table 1, seven counties are 100 percent rural; an additional 14 have rural populations of over 80 percent. (Note: The Bureau of the Census defines urban as places of 2,500 or more persons, including cities, villages, boroughs, and towns. All individuals not in this category are "rural.") For the entire United States,

the rural population grew to 61.7 million in 1990, an increase of 3.6 percent from 1980 (32 states gained rural residents). By region, the south has the greatest number of rural residents, about 42 percent of total rural population (26.8 million).

Table 1
Percent Rural Population, 1990 Census

County	Percent Rural
Forest	100
Fulton	100
Juniata	100
Pike	100
Sullivan	100
Susquehanna	100
Wyoming	100
Perry	94
Bedford	93
Greene	89
Wayne	88
Armstrong	85
Clarion	85
Snyder	85
Adams	84
Potter	83
Tioga	83
Somerset	81
Bradford	80
Mifflin	80
Monroe	80

Nationally, and in Pennsylvania, the number of individuals living in rural areas has not increased significantly since 1940. After World War II, a significant population shift to urban areas began--a trend continuing through the remainder of the 20th century. The number of rural U.S. residents was 57,246,000 in 1940; by 1990 this number had increased to about 62,000,000, an increase of about 8 percent. For the same period of time, urban population rose from 74,424,000 to almost 185,000,000. This stability in number of rural residents is somewhat misleading since many rural residents actually became urban residents without moving as urban sprawl, mostly through the growth of townships, overtook their rural territories. Nevertheless, 71,000 residents moved from rural areas in Pennsylvania between 1980 and 1990 (about 3 percent of total rural population).

In 1990, 68.9 percent of Pennsylvania residents lived in urban or suburban areas. Though only Philadelphia County is 100 percent urban, eight counties have more than 75 percent of their populations living in urban areas: Delaware (98 percent), Allegheny (96 percent), Montgomery (92 percent), Lackawanna (83 percent), Lehigh (81 percent), Bucks (81 percent), Dauphin (75 percent), and Beaver (75 percent). Since 1980 there has been a 4 percent decrease in Pennsylvania's urban population; the 8,188,295 urban residents in 1990 represent a decrease of 32,556 in the last decade. This decrease, however, was not evenly distributed across urban areas; larger cities and boroughs lost population while most suburban townships gained population. Still, 33 counties now contain 86 percent of Pennsylvania's citizens.

Most dramatic has been the loss of population in Pennsylvania's cities during the last 30 years. Not one city in the Commonwealth had a greater population in 1990 than in 1960; the larger the city, the greater the population loss. In particular, cities in western Pennsylvania experienced population loss, sometimes approaching 50 percent since 1960. Table 2 illustrates this population shift:

Table 2
Population Changes in Pennsylvania's Largest Cities, 1960 to 1990

County	City	1960 Population	1990 Population	Percent Change
Allegheny	Clairton	18,389	9,656	-48
	Duquesne	15,019	8,525	-43
	McKeesport	45,489	26,016	-43
	Pittsburgh	604,332	369,879	-39
Beaver	Aliquippa	26,369	13,374	-49
Berks	Reading	98,177	78,380	-20
Cambria	Johnstown	53,949	23,134	-48
Dauphin	Harrisburg	79,697	52,376	-34
Delaware	Chester	63,658	41,856	-34
Erie	Erie	138,440	108,718	-21
Lackawanna	Scranton	111,443	81,805	-27
Lancaster	Lancaster	61,055	55,551	-9
Luzerne	Hazleton	32,056	24,730	-23
	Wilkes-Barre	63,551	47,523	-25
Lycoming	Williamsport	41,967	31,933	-24
Mercer	Farrell	13,793	6,841	-50
	Sharon	25,267	17,493	-31
Philadelphia	Philadelphia	2,002,512	1,585,577	-21
Washington	Monongahela	8,388	4,928	-41
	Washington	23,545	15,864	-33
Westmoreland	Monessen	18,424	9,901	-46
York	York	54,504	42,192	-23

Pennsylvania retains two of the country's 75 largest metropolitan areas: Philadelphia, which ranks 12th of all U.S. cities for population, and Allegheny County, which ranks 16th. These counties have been

particularly hard hit by outmigration. Allegheny County ranked second nationally only to Wayne County, Michigan, for the greatest loss of residents in the 1980s. Philadelphia fared little better, ranking fifth nationally in loss of residents. In fact, of all counties in the United States, Pennsylvania had 6 of the 25 counties with the greatest population declines in the 1980s: Allegheny, Philadelphia, Luzerne, Beaver, Westmoreland, and Cambria.

Looking specifically at cities, only Detroit lost a greater number of residents than did Pittsburgh City. Of the 75 largest cities in the United States, 10 lost more residents than Philadelphia during these years. Philadelphia dropped from the 9th largest U.S. city in 1980 to the 12th largest by 1986. That decline continues. Nationally, urban growth in the 1980s was centered in California, Arizona, Texas, and Florida.

Accompanying the loss of residents in Philadelphia and Allegheny Counties is the aging of the remaining residents. As of 1985, Philadelphia had 313,956 residents collecting social security (about one fourth of the adult population) and Allegheny County had 268,234 recipients (about one fourth of total adult population). Together, these two Pennsylvania counties hold 2 percent of total 1985 U.S. social security recipients (36,165,229), but only one percent of total population. This discrepancy underlines the vulnerability of Pennsylvania to external factors--in this case, any future changes in federal entitlement programs. Another key to the aging of urban populations is provided by a comparison of birth and death rates per 1,000 residents. By the end of the 1980s, Pittsburgh's birth rate of 13.6 per 1,000 residents exactly matched its death rate (13.6 deaths per 1,000 residents annually). Hence, Pittsburgh is particularly affected by its high outmigration since no offsetting increase of population by births is occurring. Of the 75 largest cities in the United States, Pittsburgh ranks 74th in number of births per 1,000 population; Philadelphia, at 15.2 per 1,000 residents, ranks 66th. Conversely, of these 75 cities, Pittsburgh ranks 4th in number of deaths per 1,000 residents, while Philadelphia ranks 12th at 12.2 per 1,000 residents.

Directly related to higher education in Pennsylvania, Pittsburgh ranks first in the country in number of hospital beds per 100,000 residents (2,417). It also ranks 17th in the number of professional employees per 1,000 employees (higher education is the largest employer in Pittsburgh). Still, only 14.6 percent of the city's population holds a college degree. Philadelphia ranks 70th of the 75 largest cities for number of college graduates--11.1 percent of the population.

The Commonwealth's boroughs, for the most part, suffered the same fate as their urban neighbors. Boroughs nearest urban centers (Baldwin, West Mifflin, Wilkinsburg, Norristown, Pottstown) experienced significant population decreases. Those located in suburban or rural areas (Monroeville, Plum, State College) gained population. Pennsylvania's population distribution is very different in 1990 than it was in 1960 and before. Far fewer residents live in inner cities, fewer live in the most rural areas, and large numbers have relocated to urban-influenced areas (usually "bedroom communities" which are dependent upon the economic well-being and commuting opportunities offered by adjacent urban centers). However, more and more, these suburban areas are developing their own economic and employment base--as is the case with State College, the Route 202 corridor, and east-central Pennsylvania. In fact, cities in Pennsylvania no longer exclusively provide labor markets or population centers. There remain only four cities in Pennsylvania with populations over 100,000: Philadelphia, Pittsburgh, Erie, and Allentown. Only six cities retain populations between 50,000 and 100,000: Scranton, Reading, Bethlehem, Lancaster, Harrisburg, and Altoona. As seen Table 2, even cities located in areas with significant population growth did not share in this growth (reference Harrisburg and Lancaster).

The significant population losses for cities and larger boroughs were accompanied by simultaneous and equally dramatic increases in suburban townships. Twenty-five counties have at least one township with a population over 10,000. Township populations of 10,000 to 20,000 are now common (there are 103 state-wide); these populations now rival those of Pennsylvania's cities. Five townships exceed 50,000 persons (Penn Hills in Allegheny County, Bensalem and Bristol Townships in Bucks County, Upper Darby

in Delaware County, and Lower Merion in Montgomery County). Upper Darby and Lower Merion had 1990 populations of 81,177 and 58,003, respectively. The 1990 census records 37 cities with populations over 10,000, compared with 126 townships. In fact, some of Pennsylvania's most populous counties have no cities--only townships and boroughs (Montgomery, Cumberland and Bucks, for example). There are now 23 townships in 9 counties with populations over 20,000.

Population increases for selected townships in Berks, Bucks, and Delaware Counties provide examples of this growth (Table 3).

Table 3
Examples of Population Changes for Pennsylvania Townships 1960 to 1990

County	Township	1960 Population	1990 Population	Percent Change
Berks	Cumru	7,250	13,142	+81
	Spring	8,934	18,899	+112
Bucks	Bensalem	23,478	56,788	+142
	Lower Makefield	8,604	25,083	+192
	Newtown	1,468	13,685	+832
	Northampton	6,006	35,406	+490
Chester	East Gosham	1,694	15,138	+794
	Uwchlan	995	12,999	+1206

The split between eastern and western Pennsylvania increased during the 1980s. While 32 counties increased population, virtually all were in eastern Pennsylvania. The 35 counties with decreased populations were in western Pennsylvania.

Minority Group Populations

Pennsylvania's minority populations are growing, but at very different rates. The fastest growing minority group in the Commonwealth is "Asian" (113 percent increase from 1980 to 1990, now 1 percent of total population). Native Americans increased by 56 percent during the 1980s; 12 of every 1,000 Pennsylvania residents in 1990 are in this group. The black population increased by 4 percent during the last ten years; there were 42,985 more blacks in 1990 than 1980.

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It is important to note that census data do not include "Hispanic" as a race designation. Hence, Hispanic refers to all races. In 1990, Pennsylvania's 232,262 Hispanics self-reported their race as white (98,143; 42.3 percent), black (17,336; 7.5 percent), Native American (1,228; 0.5 percent), Asian (3,382; 1.5 percent), or "other race" (112,173; 48.3 percent). Hispanic population increased by 50.86 percent since 1980, growing to 2.0 percent of total population (see Table 4).

Table 4
Change in Pennsylvania
Minority Populations
1980 - 1990

	Number of Pennsylvania Residents		Percent of Total Population		
	1980	1990	1980	1990	Percent Change
Black	1,046,810	1,089,795	8.82	9.17	+4.11
Native American	9,465	14,733	0.08	0.12	+55.66
Asian	64,379	137,438	0.54	1.16	+113.48
Other	90,921	119,476	0.77	1.01	+31.41
White	10,652,320	10,520,201	89.79	88.54	-1.24
Totals	11,863,895	11,881,643	100.00	100.00	+0.14

Pennsylvania's non-white population (1,361,442) is now 11.5 percent of total residents. Between 1980 and 1990 the white population in Pennsylvania decreased by 132,119 (-1.24 percent); the non-white population increased by 149,867 (+12.4 percent).

Minority populations in Pennsylvania differ from contiguous states in two major ways. Minority populations, in general, are (1) concentrated in core cities and (2) significantly fewer in number than contiguous states. The most populous racial groups--blacks and Hispanics--are found in Pennsylvania's cities, though a greater percent of Hispanics have migrated to suburban areas than have blacks. Table 5 lists the "pockets" of Hispanic population in Pennsylvania.

Table 5
Pennsylvania Hispanic Population
by
Primary Location, 1990

County	Number of Hispanics	City in County	Number of Hispanics	Percent of County's Hispanic Population
Philadelphia	89,193	-		
Berks	17,174	Reading	14,486	84
Lancaster	15,639	Lancaster City	11,420	73
Lehigh	15,001	Allentown	12,274	82
Northampton	11,591	Bethlehem	8,569	74
Allegheny	8,731	Pittsburgh	3,468	40
Bucks	8,895	(Bensalem, Bristol & Warminster Townships)	3,694	42
Chester	8,565	(New Garden and West Chester Townships)	2,497	29
Montgomery	8,357	(equally distributed)		
Dauphin	6,024	Harrisburg	4,022	67
Delaware	5,998	(equally distributed)		
York	5,165	York City	3,244	63
Erie	3,364	Erie City	2,606	77

Table 6 lists the Pennsylvania counties and, where appropriate, cities with significant black populations. Notice that the eleven counties listed are home to 92 percent of all blacks in the Commonwealth (1,000,438 of 1,089,795). Also note that black populations remain concentrated in the state's largest cities.

Table 6
Pennsylvania Black Population
by
Primary Location, 1990

County	Number of Blacks	City in County	Number of Blacks	Percent of County's Black Population
Philadelpha	631,936	-		
Allegheny	149,550	Pittsburgh	95,362	64
Delaware	60,688	Chester	26,924	44
Montgomery	38,303	Norristown Cheltenham Abington	7,992 5,240 4,556	46
Dauphin	35,609	Harrisburg	26,502	74
Chester	23,995	Coatesville and West Chester	7,588	32
Bucks	15,313	(Concentrations in Bensalem, Bristol, & Warminster Townships)		
Erie	14,008	Erie City	12,815	91
York	10,558	York city	8,611	82
Beaver	10,475	Aliquippa	4,259	41
Berks	10,003	Reading	7,607	76

The information shown in Table 6 can be somewhat misleading because of location of prisons. Though census tables show a high black population for places like Cumberland and Montgomery Counties, a large proportion of those individuals are incarcerated. For instance, of the 38,303 black individuals listed under Montgomery County, 11,373 (30 percent) are in penitentiaries.

As a point of interest, there are only four places in Pennsylvania where black residents outnumber white residents: Chester City, Harrisburg, Wilkinsburg (adjacent to Pittsburgh), and Yeadon borough (Delaware County).

Philadelphia County is, by far, the most racially diverse part of Pennsylvania. From a total population of 1,585,577 individuals, 631,936 are black, 89,193 are Hispanic, 43,522 are Asian, and 3,454 are Native Americans. All together, the population of Philadelphia is composed of 759,738 non-whites--48 percent of Philadelphia's total population.

Black residents of Philadelphia represent 58 percent of all blacks in Pennsylvania. Likewise, Hispanics, Asians, and Native Americans living in Philadelphia represent 38 percent, 32 percent, and 23 percent of all such residents across the Commonwealth. For comparison, 8 percent of Pennsylvania's white residents live in Philadelphia.

As previously stated, Pennsylvania has a much smaller minority population than those of contiguous states. As percent of total population, Pennsylvania has half the minority residents of New York, New Jersey, Delaware, and Maryland (see Table 7).

Table 7
Resident Population by Race, 1990 Contiguous States, Pennsylvania, and U.S. Average

State	Total Population	Percent Black	Percent Hispanic	Percent Asian	Percent Native American
New York	17,990,000	15.9	12.3	3.9	0.3
New Jersey	7,730,000	13.4	9.6	3.5	0.2
Delaware	666,000	16.9	2.4	1.4	0.3
Maryland	4,781,000	24.9	2.6	1.4	0.3
Virginia	6,187,000	18.8	2.6	2.6	0.2
Ohio	10,847,000	10.6	1.3	0.8	0.2
Pennsylvania	11,882,000	9.2	2.0	1.2	0.1
U.S. Average	248,710,000	12.1	9.0	2.9	0.8

While there will be dramatic demographic shifts in the racial makeup of Texas, California, Florida, and southwestern states, these changes will not be mirrored nationwide. As seen in Table 8, the Bureau of the Census predicts that by the year 2010 the number of Hispanics will have grown by 38 percent, blacks by 23 percent, and whites by 8 percent. However, as a nation, whites will still makeup 79 percent of total population in 2010, down from 84 percent in 1990.

Table 8 Projections of U.S. Population, by Race, to the Year 2010			
Year	Number of Hispanics*	Number of Blacks	Number of Whites
1991	22,354,000	31,571,000	211,993,000
1995	25,223,000	33,199,000	216,820,000
2010	30,795,000	38,83,000	228,978,000
Percent Change	+37.8	+23.0	+8.0
*May be of any race			

Age

A significant by-product of Pennsylvania's outmigration is the accelerated aging of the general population. The median age of Pennsylvanians climbed from 32.1 years in 1980 to 35.0 years in 1990. For the same time period, the number of citizens over the age of 60 jumped from 2,163,914 to 2,436,512 (a 13 percent increase). Children of school attendance age (5 to 17 years) decreased by 16 percent (2,375,838 to 1,997,752). The fastest growing group of Pennsylvanians consists of individuals over the age of 85 (about 35 percent each ten years), followed by those in the group between 75 and 84 years of age (about 30 percent increase each ten years). By the year 2000, about 25 percent of all Pennsylvanians will be over the age of 60. Generally, those counties with the fewest residents have the highest median age. As of 1990, only Florida has a higher percent of total population over age 65 (18.0 percent). Pennsylvania and Iowa tie for second place at 15.1 percent; the national average is 12.5 percent.

Table 9
Pennsylvania Population by Age, 1980 and 1990

Total Population	1980	1990	% Change
	11,863,895	11,881,643	0.15
SEX			
Male	5,682,590	5,694,265	0.21
Female	6,181,305	6,187,378	0.10
AGE			
Under 5 years	747,458	797,058	6.64
5 to 17 years	2,375,838	1,997,752	-15.91
18 to 20 years	663,211	551,216	-16.89
21 to 24 years	838,418	675,559	-19.42
25 to 44 years	3,066,970	3,657,323	19.25
45 to 54 years	1,296,012	1,213,845	-6.34
55 to 59 years	712,074	552,378	-22.43
60 to 64 years	632,981	607,406	-4.04
65 to 74 years	944,065	1,070,021	13.34
75 to 84 years	456,908	587,249	28.53
85 years and older	129,960	171,836	32.22
Median age	32.10	35.00	

Age Group	Group Population	Percent of Total Population
0-4	797,058	7
5-17 (school age)	1,997,752	17
18-64 (working age)	7,257,727	61
65+ (retirement age)	1,829,106	15
Totals	11,881,643	100

Through the 1980s the number of school age children decreased by 16 percent while the number of elderly increased by 19 percent. This will continue throughout the 1990s: residents over 65 will grown from 1.8 million in 1990 to 1.9 million in 2000. How a state responds to a population where the proportion of over-65-year-olds (15.4 percent) almost equals the proportion of school age children (16.8 percent) is an unknown. Further, there are counties with significantly more elderly than youth; though most are rural, Allegheny County offers a considerable exception (17.4 percent over 65 vs. 14.8 percent school age), as does Lackawanna County (19.7 percent vs. 15.8 percent). Most striking of all, the state's working age population (18 to 64 years of age) is forecast to grow less than one percent in the 1990s, leaving the same

number of workers to support more students and more elderly.

It is clear that the 1970s and 1980s was a time when older Pennsylvanians became well organized and communicated their needs well to the legislature and Congress. This ongoing organization, coupled with the fact that older Americans consistently vote in higher numbers than the general population (and school-aged children cannot vote at all), suggests that this influence will continue well into the 1990s. However, no other group provides as good a model for political effectiveness. There is presently no single voice for education to set goals and solicit support; therefore, the future of public education--especially in an aging population--may be at risk.

Family and Housing Demographics

Of Pennsylvania's 11,881,643 residents, 11,533,219 (97 percent) reside in households. The remaining 348,424 lived in group quarters (nursing homes, etc.), of which 174,210 are institutionalized. The 4,495,966 households counted in the 1990 census consist of:

Married family households	-	2,502,072 (56 percent)
Female head, no husband	-	507,008 (11 percent)
Non-family households	-	1,339,977 (30 percent)

The average number of persons living in each Pennsylvania household is 2.57; for married families the average increases to 3.10. Of the 1,150,694 residents who live alone, 526,264 (46 percent) are over the age of 65-- of which 78 percent are women. Over 9 percent of all Pennsylvania residents are now widowed persons (a 2 percent increase from 1980). However, these numbers greatly differ by gender: 14 percent of all women in Pennsylvania are widowed, compared to 3 percent of all men. Again, the percent of population widowed is highest in rural areas; for instance, in Schuylkill County 20 percent of all women are widowed.

The census defines "person of marriageable age" as all residents at least 15 years old (9,541,123 individuals according to the 1990 census). Of these, 54 percent were married (down 2 percent from 1980). Areas with the highest number of married persons are generally rural with older residents (the highest, at 67 percent was Pike County; the lowest at 45 percent was Centre County). The number of marriageable persons who have never married increased from 2,548,513 in 1980 to 2,608,933 in 1990 (a +2.4 percent change). This increase is more even more pronounced given that the total number of marriageable persons increased only 1.7 percent since 1980.

The number of divorced individuals increased dramatically during the 1980s, up from 437,577 in 1980 to 633,644 in 1990 (+45 percent change). Further, divorced individuals are remarrying at much lower rates than in previous decades. In some counties, generally urban, the number of divorced residents who have not remarried approaches 10 percent of the marriageable population; especially high rates are seen for Dauphin, Lycoming, Cameron, McKean, and York Counties.

Migration patterns in Pennsylvania are mirrored by housing markets: the number of housing units increased 7.4 percent between 1980 and 1990, but only a 6.5 percent increase in occupied housing was reported. This represents a significant downturn in housing construction (for instance, the number of housing units increased by 17 percent from 1970 to 1980). Most building was seen in northeastern Pennsylvania where the number of housing units (1980 to 1990) increased by 74 percent in Pike County, by 47 percent in Monroe County, and by 45 percent in Wayne County. The number of occupied housing units, following decreased population in the most rural and most urban parts of the Commonwealth, decreased by 6.0 percent in Cameron County, by 3.0 percent in Lawrence County, by 2.7 percent in Philadelphia County, and by 2.5 percent in McKean County.

By far, the largest number of housing units are owner-occupied (71 percent compared to 29 percent renter-occupied). Home ownership is greatest in rural counties (83 percent in Pike County, 81 percent in Forest County); rental units are more common in urban centers. However, a significant proportion of residences in rural areas are for seasonal use (12.7 percent in Pike County and 8.2 percent in Wayne County); 23 percent of all unoccupied housing units (442,174 residences) at the time of the 1990 census were used only seasonally. At the time of the 1990 census, over one-third of all residences for sale or rent in the Commonwealth were located in Allegheny and Philadelphia Counties.

The cost of housing varies considerably by geographic location of the property. Although the median value of a home in Pennsylvania (1990) was $69,700, over 50 percent of all homes in Bucks, Chester, and Montgomery Counties were valued over $100,000. The lowest values were reported in northwestern Pennsylvania: $35,700 median in Forest County and a $37,400 median in McKean County.

Nationally, the last two decades have produced changes in family size and membership. As seen in Table 10, several trends have emerged during the last two decades: (1) by 1989 half the families in America had no children or no children living at home, (2) only one family in 10 has three or more children, (3) one child is the most frequently reported family size when a child is in the household, and (4) the average size of a family has dropped from 3.58 in 1970 to 3.16 in 1989.

Table 10
Changes in U.S. Family Size and Membership, 1970 to 1989

		Percent Distribution				
Year	Number Families	No Children	One Child	Two Children	Three or More Children	Average Size of Family
1970	51,586,000	44.1	18.2	17.4	20.2	3.58
1980	59,550,000	47.9	20.9	19.3	11.9	3.29
1989	65,837,000	50.9	20.7	18.7	9.7	3.16

Of the 65,837,000 families in 1989, 52,100,000 consisted of married couples, 2,847,000 were households headed by men, and the remaining 10,890,000 households were headed by women with no husband present. Thus, in 1989, 80 percent of American families had two married adults in the household.

Of special concern is the family support and environment for children. Children under the age of 18 (there were almost 64 million in 1989) most frequently lived in a household with two parents (73 percent). For every 1,000 children in America, 731 live with two parents, 215 live with a mother only, 28 live with a father only, and 25 have no parents in the household. There are differences, however, by race as shown in Table 11.

Table 11
Children Under 18 Years Old by Presence of Parents, 1989

			Percent Living with Mother Only						
	Number Children (1000s)	Both Parents	Total	Divorced	Married Spouse Absent	Single	Widowed	Father Only	No Parent
Total Population	63,637	73.1	21.5	8.2	5.3	6.7	1.3	2.8	2.5
White	51,134	79.6	16.1	8.1	4.0	2.9	1.1	2.7	1.6
Black	9,835	38.0	51.1	9.5	12.1	27.4	2.1	3.4	7.5
Hispanic*	6,973	67.0	27.8	7.7	10.3	8.5	1.4	2.7	2.5

*Can be of any race

CHANGES IN STATE SYSTEM OF HIGHER EDUCATION DEMOGRAPHICS

The State System enrollment for fall 1991 was 99,850, an increase of 18,326 (22.5 percent) over fall 1983. Annual enrollment increases were highest between the years of 1985 and 1990, averaging 3,185 additional students per year (about a 4 percent annual increase). The dramatic increase in State System enrollments, 81,524 in 1982 to 99,850 in 1991 mirrors generally increasing higher education enrollments in Pennsylvania, despite only a slight growth in population and a decrease in the annual number of high school graduates.

It is important to note that between 1983 and 1990 the State System of Higher Education accounted for 52 percent of all growth in Pennsylvania higher education at four-year colleges and universities. For the Commonwealth, postsecondary education enrollments grew from 522,980 in 1983 to 564,462 in 1990 (7.9 percent). For the same period of time, State System enrollments grew 21.5 percent; this represents 42.3 percent of total postsecondary education enrollment increases in Pennsylvania.

System enrollment increases have averaged 2,305 per year from 1983 to 1991. Enrollments have increased more than 30 percent at California, East Stroudsburg, Edinboro, Kutztown, and Lock Haven Universities. Bloomsburg, Slippery Rock, and West Chester Universities experienced enrollment growths between 20 and 30 percent; all others grew between 10 and 20 percent, with the exception of Cheyney University which experienced a 24 percent decrease in student enrollment.

The number of men students in the State System increased 12.2 percent since 1983 compared to a corresponding 31.2 percent increase for women (see Table 12). About 76 percent of all State System enrollment growth since 1983 is attributable to additional women entering System universities. For the 1991-92 academic year, women outnumber men in the State System by 59 to 41.

There has been a significant change in the number of part-time enrollments, up 31 percent since 1983, compared to an 21 percent increase in full-time enrollment. Yet, as a percent of **total** enrollment, part-time students grew slightly--from 19.0 percent in 1983 to 20.2 percent in 1991. Graduate programs are enrolling 81 percent more students than in 1983, accounting in 1991 for about 17 percent of all graduate students in Pennsylvania. In the 1990-91 academic year, the State System enrolled more graduate students then did (singularly) Temple University or Penn State or the University of Pittsburgh.

Table 12 Headcount Enrollment by Category, 1983 and 1991				
State System of Higher Education				
	1893	1991	Change	Percent Change
Women	44,657	58,592	+13,935	+31.2
Men	36,756	41,258	+4,502	+12.2
Full-Time	65,955	79,670	+13,715	+20.8
Part-Time	15,458	20,180	+4,722	+30.5
Undergraduate	71,384	88,368	+16,984	+23.8
Graduate	7,291	13,212	+5,921	+81.2

Total attendance at all Pennsylvania postsecondary institutions is up 76,090 (16 percent) over the last ten years. The highest gains for colleges and universities were at community colleges and the State System of Higher Education (both had increases of 17 percent); private colleges were next (13 percent), followed by private state-aided universities (6 percent), state-related universities (4 percent), and private junior colleges (4 percent). Proprietary schools increased enrollments by 198 percent for the same period of time, a three-fold difference. Table 13 presents enrollment trends by type of institution. (Please note that 1990-91 is the latest enrollment data available for all sectors.)

Table 13
Ten-Year Enrollment Increases at Selected Types of Pennsylvania Institutions of Higher Education

Type of Institution	1983-1984 Enrollment	1990-1991 Enrollment	Change	Percent Change
State System of Higher Education	81,524	99,082	+17,558	21.5
State-Related Universities	129,687	140,928	+11,241	8.7
Community Colleges	96,144	104,292	+8,148	8.5
Private State-Aided Universities	47,600	46,487	-1,163	-2.4
Private Colleges/Universities	150,136	164,100	+13,964	9.3
Private Junior Colleges	6,365	6,233	-132	-2.1

Source: Pennsylvania Department of Education, Fall Enrollments 1990

Note from Table 13 that public higher education students in 1990-91 (344,302) outnumbered independent college/university students (216,820) by more than three to two.

Changes and Trends in Human Resources

The State System of Higher Education had 11,499 employees at the beginning of the 1991-92 academic year. Of these, 10,357 were employed full-time; 1,142 part-time.

Almost half (46 percent) of all full-time employees are faculty (4,789 individuals). Most faculty are men (3,257, 68 percent) and white (4,328, 91 percent). However, these demographics are rapidly changing; for example, as the total number of full-time faculty increased from 4,305 in 1983 to 4,789 in 1991 (an increase of 484), the total number of women faculty increased by 498 while the number of men decreased by 14. This trend extends to hiring of all employees in the State System (Table 14). From 1983 to 1991 an additional 1,123 women were hired (37 percent increase); for the same period of time the number of men increased by 432 (8 percent).

Table 14 Employment by Race and Sex, 1983 to 1991 State System of Higher Education				
Group	Number Employer 1983	Number Employed 1991	Change	Percent Change
Black	527	761	+234	+44
Hispanic	46	126	+80	+174
Asian	119	204	+85	+71
Native American	4	17	+13	+325
White	8,019	9,249	+1,230	+15
Women	3,273	4,496	+1,123	+37
Men	5,429	5,861	+432	+8

The age of faculty is of particular importance; many System faculty are approaching possible retirement (Table 15). At the same time, the number of recent doctoral graduates is at best holding steady; many disciplines have declining numbers of graduates. A significant event of 1991 was the Mellow Bill, which allowed early retirement of State System employees. A total of 498 System employees took advantage of this early retirement offer. Of these, 296 were faculty (160 were at full professor rank).

Table 15 State System Faculty by Age Cohorts October, 1991		
Age Cohort	Number Faculty	Percent Total Faculty
30 and under	120	2
30-39	1018	19
40-49	1,891	35
50-59	1,840	34
60 and over	585	11
Total	5,454	100

Only 21 percent of all faculty are less than 40 years of age. Being more specific: 79 percent are older than 40, 44 percent are older than 50, and 585 faculty (11 percent) are above the age of 60.

Enrollment Developments and Trends

In the 1980s, increased numbers of recent high school graduates enrolled full-time in State System universities and remained longer to balance out the effect of fewer graduates. The average age of the student body will continue to gradually increase (though this figure will vary significantly by university), with higher numbers of part-time students attracted to four-year institutions than was true during the past fifteen years (when the community college sector was established). However, part-time undergraduates continue to choose independent colleges or Temple University and University of Pittsburgh as first choice of institution.

Other trends which influence enrollment include:

- Career Plans - Between 1970 and 1985 the largest enrollment growth was seen for business, computer and information sciences, and engineering majors. Enrollments in all three disciplines peaked about 1983, then began to decline steadily. During the same time, a large decrease in the number of education majors was observed, dropping nationally from 21.7 percent of all freshmen in 1966 to 6.2 percent in 1985. The drop in the State System of Higher Education for the same period of time was from about 95 percent of all enrollment to 23 percent in 1990. The number of students planning to teach, however, is fewer than the number of education majors. The dramatic and recent decrease in the number of education majors in State System of Higher Education universities was caused by changes in student aspirations, markets for new teachers, and evolution of the teacher training schools to multi-purpose universities.

- The Changing Role of Youth - A publication by the United States Department of Education, Youth Indicators, 1991, summarizes the rapidly changing environment for youth: "In the space of a generation, the world of youth has changed dramatically. Compared with their parents, today's 14- to 24-year-olds take longer to leave home, finish college, form their own households, marry, and have children. They are more likely to be part of smaller families with two wage-earners or live with a lone parent in a single-parent family. Their real income will be lower in their first jobs. And while they are less likely to die young than their parents' generation, they are more likely to die by their own hand, or by someone else's." Demographic changes for America's youth include:

    1. A "returning to normal" after the post-World War II baby boom. In 1950, 16 percent (24.5 million) of the population was between the age of 14 and 24. That number peaked in 1980 at 46.2 million, declining to 39.8 million in 1989--again 16 percent of the total population.

    2. The 14- to 17-year-old population will increase by 18 percent during the latter part of the 1990s.

    3. In surveys conducted by the Department of Education, high school seniors in 1990 agreed with their parents on 7 out of 10 important topics, the same as 1975 seniors.

4. By percent, more 16- to 19-year-olds are victims of violent crimes than any other age group.

5. Teenagers are comfortable--and have come to expect--electronic assistance in all forms of recreation, work, and education. More than half of all elementary school children used computers in school during the 1989-90 academic year. About half of all 1988 seniors reported watching television at least three hours per day. Though watching television is the most common daily activity reported by teenagers, American teens do not watch more television per day than teens in other English-speaking countries.

o The Changing Role of Women - Of special importance to the State System of Higher Education, because of significant enrollments by women, has been the summary change of the role of women in Pennsylvania. Significant demographic shifts over the past 20 years include:

1. More women are entering higher education and a greater proportion are working mothers.

2. Shifts in preferences for majors and careers, away from the traditional fields of teaching, nursing, social work, and homemaking, toward business and the professional schools. There has been a steady growth of women full-time undergraduate students and the more rapid growth of women graduate enrollments.

3. Married-couple families are more likely to have the woman work outside the home. Married women in the workplace have increased from 37 percent in 1975 to 58 percent in 1988, nationally. In Pennsylvania, the number of women in the workplace has increased faster than forecast for the 1980s. Though 52.8 percent of Pennsylvania women were employed in 1990, this proportion is significantly lower than the national average of 57.4 percent. In only five states--West Virginia, Kentucky, Alabama, Mississippi, and Louisiana--is the percent of employed women lower than Pennsylvania.

4. Most single-parent families are headed by women. The percent of children who live in single-parent families has doubled in the past twenty years, from 11 percent in 1970 to 22 percent in 1990.

5. The employment rate for 16- and 17-year-old men has remained unchanged since 1970. However, the employment rate for women has dramatically increased and in 1989 was higher for women (39 percent of all 16- and 17-year-old women) than for men (36 percent).

o Nationally, the number of undergraduate students who plan to earn a master's, doctoral, or professional degree after graduation has remained stable over the past fifteen years--49 percent in 1970 and 51 percent in 1989. However, during this time the percent of women who intend to enroll in graduate school has doubled; the percent of men has decreased by about one-fifth.

Trends in State System of Higher Education Tuition and Charges

The resident undergraduate tuition and average mandatory fees for the 1991-92 academic year were $3,028 at the fourteen universities in the State System of Higher Education. Tuition and fees are up 84 percent from 1983 when the State System was established. This compares with eight-year increases of 75 percent at state-related universities, 58 percent at community colleges, 94 percent at state-aided universities, and 105 percent at independent colleges and universities. Universities in the State System continue to provide the lowest average cost of all four-year institutions and all two-year private institutions in Pennsylvania (see Table 16); when tuition fees are coupled with costs for room and board, System costs remain appreciably lower than other sectors of higher education in Pennsylvania.

Table 16
Average Resident Tuitions, Fees and Charges by Type of Institution
1991-1992

Type of Institution	Undergraduate Tuition and Fees	Graduate Tuition and Fees	Combined Room and Board
SSHE	$3,028	$2,937	$2,978
State-Related Universities	4,134	5,248	3,734
Community Colleges	1,478	--	--
Private State-Aided Universities	11,000	10,450	4,942
Independent Colleges/Universities	10,167	8,481	4,191

Source: Pennsylvania Department of Education
Basic Student Charges 1991-1992

The resident, undergraduate student cost of attending and residing at a State System university in 1991-92 is 28 percent of the average cost of a private state-aided university, 73 percent of state-related universities, and 30 percent of the average cost of a private college/university in Pennsylvania.

However, lowest cost and affordable cost are not necessarily the same. Despite their comparatively low level in Pennsylvania, tuition and fees in the State System for 1991-92 rank third highest in the nation (See Table 17) for similar public, four-year institutions.

Table 17
States with Highest Undergraduate Tuition and Fees
Fall, 1991

Resident Undergraduate
(Public Institutions)

State	Tuition and Fees
Vermont	$3,328
Massachusetts	3,083
Pennsylvania*	3,028
New Jersey	2,830
Virginia	2,780
New Hampshire	2,698
Ohio	2,661
Maine	2,628
Michigan	2,437
Connecticut	2,421
Maryland	2,396
New York	2,376
South Carolina	2,314
Rhode Island	2,297
Minnesota	2,157
NATIONAL AVERAGE	$2,137

* State System of Higher Education only

Source: American Association of State Colleges and Universities

The total cost of attending and residing at a State System university (tuition and mandatory fees) and

living on campus (room and board) has increased 77 percent for the eight academic years since 1983-84, as shown in Table 18. Hence, since the establishment of the State System of Higher Education, total annual cost increases to undergraduate students living on campus have averaged 9.8 percent; annual increases in tuition have averaged 10.5 percent.

Table 18
Increases in Resident Undergraduate Tuition/Fees and Average Combined Room and Board Charges for the State System of Higher Education, 1983-84 to 1991-92

	1983-84	1984-85	1985-86	1986-87	1987-88	1988-89	1989-90	1990-91	1991-92
Total Charges	$3,398	$3,575	$3,784	$3,895	$4,193	$4,471	$4,929	$5,292	$6,009
Increase from Previous Year	$128	$177	$209	$111	$298	$278	$458	$363	$717
Percent Annual Increase	3.9	5.2	5.8	2.9	7.6	6.6	10.2	7.4	13.5

Average room and board fees since 1983 have increased at a slower rate than the five years previous to the System's formation, and have been in line with increases in the Consumer Price Index (CPI). System room and board charges are the least expensive in Pennsylvania, averaging $2,978 in 1991-92. This average is 80 percent of the state-related average charges ($3,734) and 71 percent of independent college/university charges ($4,191).

The State System operates 16 dining halls and has a planned capacity of 32,948 dormitory students. Room and board fees are set by the individual universities. Annual charges range from $2,638 to $3,520 for 1991-92, a 33 percent variance. Semester room charges range from $745 to $1,079 (a 45 percent variance) across System universities and semester board charges range from $440 to $832 (an 89 percent variance).

Recent State System tuition increases, because of relatively decreasing appropriations, have outpaced the Higher Education Price Index (HEPI) and the Consumer Price Index (CPI). As seen in Table 19, HEPI increased 49.6 percent from 1983-84 to 1991-92. A best proxy for expenditures for this same period of time is total Education and General (E & G) revenues, since for this System, E & G revenues differ insignificantly from E & G expenditures. To best compare HEPI to System expenses, total E & G per FTE is used.

Table 19
HEPI/State System Comparisons, 1983 to 1991

Year	HEPI Index	HEPI Percent Change From Prior Year	Total E & G Revenue per FTE	E & G Percent Change from Prior Year
1983-84	104.7	+4.7	$4,770	+2.7
1984-85	110.5	+5.5	5,185	+8.7
1985-86	115.6	+4.6	5,396	+4.1
1986-87	120.4	+4.2	5,606	+3.9
1987-88	125.7	+4.4	5,881	+4.9
1988-89	133.1	+5.9	6,355	+8.1
1989-90	140.8	+5.8	6,690	+5.3
1990-91	148.3	+5.3	6,931	+3.6
1991-92 (est.)	154.3	+4.1	7,578	+9.3
1983-87 Change	**+21.0**	**+20.1**	**+$1,111**	**+23.3**
Annual Change (1983-87)	+5.2	+5.0	$278	5.8
1983-91 Change	**+49.6**	**+47.4**	**+$2,808**	**+59.9**
Annual Change (1983-91)	+7.1	+6.8	$401	+8.4

As seen above, E & G revenues (expenses) per FTE for the years 1983 through 1987 increased in almost direct proportion to the HEPI rate (20.1 percent vs. 23.3 percent). Even for these years, increased revenues were actually less than HEPI increases; the 1987-88 similarity of indices is due primarily to new policies which achieved significant cost savings for the State System of Higher Education.

The discrepancy of indices seen by the 1991-92 academic year is due to cuts in state appropriations to the State System of Higher Education. By the eighth year of the System, the HEPI Index had risen 49.6 percent (6.8 percent annually) and expenses had risen 59.9 percent (8.4 percent annually). This 59.9 percent increase has caused the need for significant increases in student tuition. Tuition has been driven up by 78 percent for this eight year period because appropriations did not match expenses. In fact, appropriations as percent of E & G expenses significantly decreased from 62.9 percent in 1983 to 54.0 percent in 1991 (an annual decrease of 0.7 percent; see Table 20).

Table 20
Comparison of System Expenses and Commonwealth Appropriation

Year	Total System Appropriation	Percent Increase Over Prior Year	Percent of Total E & G
1983-84	$235,053,000	+2.0	62.9
1984-85	250,051,000	+6.4	61.4
1985-86	263,803,000	+5.5	62.1
1986-87	279,381,000	+5.9	61.5
1987-88	295,350,000	+5.7	59.5
1988-89	311,594,000	+5.5	56.1
1989-90	338,496,000	+8.6	55.0
1990-91	348,409,000	+5.0	55.5
1991-92	370,960,000	+6.5	54.0
1983-91 Change	$135,907,000	+57.8	-8.9
Annual Change	**+15,100,778**	**+6.4**	**-1.0**

Student Financial Assistance in Pennsylvania

The number of students receiving financial aid ranges from 50 to 90 percent, depending upon which System university is observed. In Pennsylvania, most programs are administered by the Pennsylvania Higher Education Assistance Agency (PHEAA). PHEAA assists students in three major ways: serving as agent for grant awards provided by the Pennsylvania Legislature, administering the federal government's

student loan program, and helping students obtain Federal Pell awards.

During the 1989-90 academic year (the latest available data from PHEAA), 23,362 System students received $35,389,541 in direct PELL academic grants, and 21,363 students received $17,035,696 in direct grants from PHEAA. Students received an additional $5,651,284 in work study grants. By far, the largest source of "aid" was student loans: $88,845,972 in 1989-90 alone (this does not include loans obtained by students or parents independently from sources other than PHEAA). Students in the State System of Higher Education borrow in similar numbers to students in state-related universities and independent colleges/universities in Pennsylvania.

Direct grants in 1989-90 equalled 15.2 percent of all student tuition charges in 1989-90; work study equalled an additional 1.8 percent. Student loans equalled 31.2 of total tuition charges. Hence, government grant and loan programs provided 48.2 percent of all student revenues received by State System universities. For a State System student, the average PHEAA grant now covers 16 percent of total annual student charges (resident undergraduate living on campus) and the average PELL grant covers 38 percent of such charges.

The number of PHEAA state grant awards to State System institutions has been proportionately stable since 1983; however, the amount of total awards has increased only slightly when measured in constant dollars. As seen in Table 21, compared to other postsecondary institutions, total value of direct grants from the legislature (through PHEAA) to State System students is disproportionately lower--not unexpected since student awards are based primarily upon the level of tuition charged by the institution.

Table 21
Comparison of 1983-84 and 1989-90 PHEAA Academic Year Awards by Type of Institution

	1983-84 Awards		1989-90 Awards			
Type of Institution	Number	Value	Number	Value	Percent Change Number	Percent Change Value
Independent Four-Year	30,813	$33,831,494	32,819	$52,661,028	+6.5	+55.7
Independent Two-Year	2,071	1,749,890	1,755	2,409,440	-15.3	+37.7
State System Higher Ed	20,045	10,326,384	21,363	17,935,696	+6.6	+73.7
State-Related	25,523	18,847,661	27,001	33,212,904	+5.8	+76.2
Community Colleges	9,057	3,025,821	10,448	5,857,832	+15.4	+93.6
Hospital Nursing Schools	2,001	1,213,721	1,753	1,941,253	-12.4	+59.9
Business/ Technical Schools	9,549	7,083,008	8,987	9,956,039	-5.9	+40.6
Out-of-State Institutions	8,685	3,808,544	9,197	4,216,467	+5.9	+10.7
TOTALS	107,744	$79,886,523	113,313	$128,190,659	+5.2	+60.5

Source: Pennsylvania Higher Education Assistance Agency. Summary Statistics, March, 1991

One consequence of declining direct student aid is increased student borrowing. Since 1964, when the Commonwealth began the college loan program, students in the state colleges and university (now the State System of Higher Education) have taken 616,121 loans totaling $977,453,655. Implications of this emerging trend are still being considered; however, several risks seem inherent:

- Student loans represent a change in public policy; even students who attend public institutions are expected to "pay for their educations themselves."
- The future well-being of the borrower is threatened in three important ways: not being able to finance other immediate needs after graduation (usually housing and transportation), not being able to afford postgraduate education, and bearing the risk that the return (income

after graduation) will not be great enough to justify the amount borrowed.

- The student debt burden can have direct and long-lasting implications for the performance of the national economy, especially since the growth of student borrowing has now outpaced general consumer borrowing.

- Loan programs divert public funds from direct institutional assistance (which can result in lower tuitions) to interest payments to non-educational institutions.

- There is evidence that self-financing of higher education through student loans does affect equality of access to college. As expressed by Janet S. Hansen of the College Board, "Loans, unlike grants, are not neutral in their effects on different groups. Because of continuing disparities in income between white males, on the one hand, and women and minorities on the other, the latter will find loans more burdensome to repay." They may also find them unacceptable, resulting in non-enrollment.

For students in the State System of Higher Education, as for college students in general, the transition from direct grant student aid to loan programs has been rapid. About two-thirds of all State System undergraduates now hold student loans. In 1989-90, a State System senior who carried a Guaranteed Student Loan (GSL) had incurred an average debt of $6,840, up from $4,406 in 1980-81.

Combined state and Federal grant funding for State System students is increasing approximately 7.6 percent annually. Student expenses increase at about 9.8 percent per year.

Funding for the State System

State System universities have two major sources of Educational & General income: state appropriations (54 percent of revenues) and student tuition and fees (38 percent of revenues). These sources make up 92 percent of $705,649,000 in E & G expected revenues for 1991-92 (this figure assumes no mid-year budget cuts).

Without a change in priority, large increases in state appropriations for higher education cannot be expected and competition for scarce funds (especially health care and corrections) will increase among state agencies. Increased giving by alumni and business, new partnerships, additional tax breaks or reduced employer contribution rates, endowments, gifts, and higher tuition will be expected to make up the difference between needed revenues and appropriations.

Table 22 compares recent increases in higher education appropriations for Pennsylvania with other states which compete for students from the Commonwealth. As seen, Pennsylvania has approved much smaller increases over the last ten years than most contiguous states; indeed, the ten-year increase for Pennsylvania was not only significantly lower than the national average, it was among the very lowest for the fifty states. This figure is somewhat distorted by the significant funding for independent and state-aided colleges and universities (Pennsylvania ranks fourth in the amount of state aid to independent colleges). For two decades, it has been the policy of the Commonwealth to place at least equal value on raising tuition with increasing appropriations to fund higher education. The 1990's could mark a third decade of such policy. Governmental pressure to contain tuition while appropriations are decreasing will drive a deeper gap between revenues and expenses.

Table 22
Appropriations of State Tax Funds for Operating Expenses of Higher Education, in Thousands of Dollars, for Fiscal Years 1980-81 and 1990-91, with Percent Gain Over the Most Recent Ten Years, Pennsylvania and Contiguous States

State	1980-81	1990-91	Ten-Year Gain Percent
Delaware	63,811	122,391	92
Maryland	367,701	885,085	141
New Jersey	520,275	1,055,893	103
New York	1,644,361	3,142,943	91
Ohio	685,292	1,520,055	122
Virginia	511,737	1,077,434	111
West Virginia	167,717	262,731	57
Pennsylvania	788,141	1,421,710	80
United States (Weighted Average)	20,978,234	40,887,722	95

Source: Center for Higher Education, Illinois State University. The Grapevine, Number 368, November-December 1990.

Threats and Opportunities of Financing the State System of Higher Education

Because tuition levels for State System universities are directly related to the annual legislative appropriation, analyzing the threats and opportunities of future funding from the Commonwealth is imperative.

Threats

- Distinction between preferred and non-preferred higher education budgets remains elusive; even the question "Should System universities remain state-owned or become state-related?" has several possible responses.

- Measured in constant dollars, Commonwealth support for the State System is declining.

- Student tuition, fees, and room/board charges, though increasing annually at about 10 percent, remain insufficient to cover increasing costs, including compensation negotiated by the Commonwealth and the State System.

- Percent of total E&G revenues received from the state has declined from 64 to 54 percent since 1983.

- There is not adequate permanent funding for maintenance of state-owned facilities and grounds of State System campuses.

- Funding of higher education institutions in Pennsylvania has been incremental, rather than based upon growing enrollments or other appropriate factors.

- There are more incentives than disincentives for Pennsylvania colleges and universities to raise tuition. In particular, the tuition stabilization sought by the State System of Higher Education has reduced financial aid awards for students.

Opportunities

- Universities, as a group, demonstrate fiscal responsibility and can respond well to identified improvements and shared efficiencies.

- State System universities have increased flexibility in procedures for purchasing, contracting, and obtaining local services and materials.

- Most human resource management tasks have been decentralized to each university's administrators.

- The ability of State System universities not to lapse funds at the end of the fiscal year has stimulated long-term planning efforts.

Federal and State Policy

Federal policy in the areas of interest rates (ease of obtaining loans to pay tuition), income tax (tuition credits, employment training credits), the marriage penalty (which affects parental income), day care (which expands markets for older and female students), military educational benefits, and housing/mortgage rates (after-shelter income for education) all have a direct, substantial effect on universities. Federal outlays for student financial assistance, research grants, veterans benefits, and capital budgets must be constantly monitored. In general, federal expenditures for education, especially basic education, are expected to decrease, returning the support burden to the states, institutions, and students. Pennsylvanians now pay an average of three times the dollars for social security taxes as property taxes to support local education. One area where federal support may increase is availability, access to (reduced financial qualifications for families), and cost of federally-backed student loans.

Policies mandated by legislative action will increase threats to direct education spending. Legislated programs for health, social security, corrections, and welfare services are increasing rapidly and will continue to increase as the general public grows older. Universities can continue to receive federal funds through indirect services and academic programs which support these legislated service, but such funds will be program-specific and not general revenues.

In Fiscal Year 1990 Pennsylvania received $45.4 billion in federal funds. Of this, 63.4 percent consisted of direct payments to Pennsylvania citizens (social security, Medicare, and some veterans' benefits). Grants to state and local governments amounted to 13.5 percent. An additional 11.3 percent went to individuals as military or civilian pay (the majority, by far, to military base personnel and post office employees). Procurement contracts accounted for 9.1 percent, and 2.6 percent went for social programs. Though Pennsylvania ranks fifth in U.S. population, it ranked 27th in FY90 in per capita federal funds.

The end of the cold war has canceled any attempts to reinstate the draft. At a time when the number of 18- to 22-year-olds is the lowest in 30 years, this recent change of events has been most beneficial to higher education enrollments. In addition, as the military downsizes, many veterans will be using their "GI Bill" in the near future.

Pennsylvania's Labor Force

College enrollment historically is correlated with rates of unemployment and demographic patterns; however, historic trends related to unemployment (higher rates of unemployment lead to higher rates of college enrollment) did not hold during the 1980's. Generally, this change was due to the shift in types of jobs available; in past decades, unemployment meant waiting for a new, similar job or returning to one's original company when work was available. In the 1980s, loss of employment was frequently linked with demise of the occupation or company; hence, the worker is forced to retrain for new employment or attends a postsecondary institution to seek employment which approximates past salary record. This trend will accelerate in the 1990s.

Blacks and Hispanics did not fully participate in the economic expansion of the 1980s. Because these groups remain over-represented in recession-prone occupations (laborer, construction, service worker), it is likely these groups will continue to experience higher than average unemployment rates in the 1990s, and this has been true for the last two years. The Department of Labor and Industry predicts that double-digit unemployment (around 15 percent) will continue for blacks and Hispanics throughout the next decade. Further, occupations which will experience growth (health services, high technology, and business services) will see growth outside of central cities in Pennsylvania. Because minorities are concentrated in the Commonwealth's central cities, such jobs may not be accessible to blacks and Hispanics. One prospect is available to change these predictions: increased outreach and training by employers. Given the state of the economy as the 1990s begin, this seems highly unlikely in the near future. While the non-white proportion of Pennsylvania employees will grow from 8.8 percent in 1980 to 9.9 percent in 2000, most of this growth is due to outmigration of white workers.

Most growth in the number of new employees will be due to more women entering the workforce. This number will continue to grow dramatically in the 1990s; the percent of women entering the Pennsylvania workforce grew from 42 percent in 1975 to 49 percent in 1985 to 52 percent in 1990 and is predicted to increase to 57 percent by 2000. Should this occur, women will then account for 48 percent of all Pennsylvania employees. The driving force in this growth is the number of women who want employment and children. This portends a workforce desiring job sharing, employer provided child care, different health and leave benefits, and flexible work hours--in short, employment which allows maximum integration with the demands of child rearing. Nationally, between 1960 and 1990, the percent of mothers at work outside the home grew from 28 percent to 57 percent.

Certain trends can be predicted if the economy in Pennsylvania enters an economic recovery in the early to mid-1990s: workers in all trades and services will be better educated, the median age of the labor force will increase, more women (specifically women with children) will continue to enter the labor force, and the number of new jobs will expand. This expansion, coupled with no population growth, can reduce the unemployment rate, though some labor shortages will emerge. Electronic automation and continuing shifts from manufacturing to service jobs will encourage self-employment. There is already a strong

national trend from salaried positions to personal entrepreneurship, a trend which should extend to Pennsylvania (also, a trend particularly beneficial to rural areas).

The trend toward service jobs and advanced technology jobs, both of which pay less than manufacturing positions, is accelerating in Pennsylvania at a pace not predicted even five years ago. Service occupations are projected to grow at a significantly faster pace (20.3 percent) than the average for all jobs (8.7 percent) through 1995. Most frequent service jobs in Pennsylvania are, in order: food service workers, health services, and personal services (includes personal care, social welfare workers, flight attendants, etc.).

Employment Trends

Employment needs have a direct and sudden demand on higher education. Rates of overall unemployment in Pennsylvania have dropped from 12.9 percent in June 1983 (the beginning of the State System of Higher Education) to about 5.6 percent as the 1990s begin (below the national average of about 7.0 percent). Though forecasts can and do change quickly because of economic or social developments, the number of Pennsylvania's unemployed should drop through the 1990s as the number of new jobs grow by about 500,000 with virtually no population growth. This should reduce the number of annually unemployed to 310,000, a drop of 132,000 from the 1980s. These 310,000 unemployed translate into a 5.2 percent rate of unemployment. Unemployment rates reported are conservative; the counting procedure does not include all individuals and outmigration helps to lower the computed rate. Also, there have been changes in the way unemployment rates are calculated by the federal Government since 1983, making direct comparisons inappropriate.

The following statistics were prepared by the Pennsylvania Department of Labor and Industry as of Spring, 1987. Four assumptions were used to calculate projections:

1. There will be a decline in the rate of expansion of the labor force during the projection period.

2. Pennsylvania's unemployment will be about 6.0 percent through 1995.

3. Technological advancements will result in substantial gains in productivity by 1995.

4. There will be no major economic upheavals, such as major wars or price shocks.

Based upon these assumptions, the total nonagricultural wage and salary employment in Pennsylvania is expected to reach a record high of 5,102,000 by 1995, an increase of 362,900 new jobs from 1985. Philadelphia will account for 156,100 of those new jobs, followed by Pittsburgh with 53,000. The fastest growing job market (14 percent growth) will be the Lancaster Metropolitan Area, followed by Harrisburg (11 percent), York (10 percent), and State College (9 percent).

Total manufacturing employment will drop by about 13 percent from 1985 to 1995 (compared to the 18 percent drop from 1975 to 1985), leaving only about 19 percent of all Pennsylvania workers in manufacturing jobs. This drop could be increased by foreign imports, domestic competition, or technological improvements. Durable goods (for example, vehicles and household appliances) industries will account for three out of four job losses in the manufacturing sector. The greatest losses are expected to occur in the primary metal industries and the textile products industries. The only durable goods industry showing employment growth potential is lumber and wood products, with lesser growth projected for printing and publishing, chemicals, and food and kindred products industries.

Significant growth will be found in the service industries, led by the private health services (up 94,300 jobs by 1995), business services (up 79,900), and social services (up 22,250). Employment gains in trade, construction, finance insurance, and real estate are also expected between 1985 and 1995, but the 1991-92 recession has already reduced those forecasts. Small employment gains are projected for government, transportation, and public utilities; however, these industries will represent a smaller proportion of all jobs by 1995.

The change from a manufacturing-oriented state to a service-oriented state (which began about 1960 in Pennsylvania) is speeding up, partially due to the lengthy recessions of the 1970s, 1980s, and now 1990s, and the loss of over 400,000 manufacturing jobs in the past few years. As a rule, service jobs pay less than manufacturing jobs, but changes in the economy less harshly affect service employees and they are less subject to mass and sudden layoffs. A service-oriented economy will shift corporate priorities from capital intensive planning to people intensive activity. Retraining and skill upgrading will be needed to accommodate flexible and rapidly changing business priorities.

Generally, employment opportunities for the next 10 years will be with more productive, small-scale business or individual entrepreneurship. New values on human resources, job satisfaction, information work, and small-scale economic activity will interact to substantially change employment patterns in Pennsylvania. As seen in Table 23, virtually all employment gains in Pennsylvania between 1985 and 1995 will take place in service industries.

Table 23
Projected Employment Changes for Pennsylvania Industries, 1985 to 1995

Rank	Largest Job Gains by Volume	Employment Gain
1	Marketing and Sales	91,816
2	Food and Beverage Services	74,913
3	Management and Administration	58,799
4	Clerical	50,777
5	Health Occupations (RN's 28,714; Therapists 3,018)	42,465
6	Technicians (LPN's 5,064; Med Tech 11,547)	28,913
7	Teachers (Preschool 7,139; Elementary 5,434; Secondary 4,873)	27,582
8	Health Services (Nursing aides 15,956)	23,802
9	Janitors/Cleaners	21,235
10	Mechanics (Vehicle 12,406)	17,232
11	Personal Services	16,190
12	Construction (Carpenters 6,929)	14,998
13	Motor Vehicle Operators (Truck Drivers 10,817)	14,385
14	Protective Services (Guards 9,527)	13,383
15	Computer Programmers	12,023
16	Scientists (Computer Scientists 6,775)	8,268
17	Social/Recreation Workers	6,894
18	Writers and Artists (Commercial Art Design 2,544)	6,411
19	Engineers	5,663
20	Lawyers	4,556
Rank	**Largest Job Losses by Volume**	**Employment Losses**
1	Machine Setup and Operation	50,874
2	Apparel and Textile Products	25,555
3	Machinists	18,279
4	Assembly Line Workers	15,553
5	Precision Production Workers	11,714
6	Heavy Equipment Operators	6,233
7	Helpers and Laborers	3,022
8	Farmers	3,311
9	Farm Workers	2,656
10	Railroad Transportation	2,075

Source: Pennsylvania Department of Labor and Industry, Statewide and Major Labor Market Areas, Industry Trends and Outlook for Non-agricultural Wage and Salary Workers, 1985 and Projected 1995, 1987.

Numbers of new jobs and number of lost jobs between 1985 and 1995 are listed in Table 24. These numbers are particularly relevant to undergraduate institutions because almost all gains are associated with service industries which rely on the baccalaureate degree. Further, most job losses are associated with industries, primarily manufacturing and mining, which have not had historic ties to higher education, with the exception of engineering schools.

Table 24
Projected Rate of Change for Pennsylvania Industries, 1985 to 1995

Rank	Fastest Growing by Rate of Change	Percent Increase
1	Holding and Investment Offices	45
2	Business Services	43
3	Legal Services	34
4	Social Services	32
5	Miscellaneous Repair Services	28
6	Transportation Services	26
7	Health Services (Private)	24
8	Security, Commodity Brokers and Services	22
9	Credit Agencies Other Than Banks	22
10	Eating and Drinking Places	22
11	Transportation by Air	20
12	Amusement and Recreation Services	20
13	Hotels and Other Lodging Places	20
14	Miscellaneous Services	20
15	Wholesale Trade-Durable Goods	17
Rank	Most Rapidly Declining by Rate of Change	Percent Decreases
1	Metal Mining	90
2	Tobacco Manufacturing	65
3	Primary Metal Industries	32
4	Leather and Leather Goods	28
5	Petroleum and Coal Products	24
6	Railroad Transportation	23
7	Apparel and Textile Products	22
8	Textile Mill Products	21
9	Machinery, Except Electrical	17
10	Transportation Equipment	17
11	Fabricated Metal Products	16
12	Electric and Electronic Equipment	15
13	Stone, Clay, and Glass Products	11
14	Bituminous Coal and Lignite Mining	11
15	Anthracite Mining	10

The Department of Labor and Industry projects 5,288,000 jobs in Pennsylvania by 2000. This represents 36,593 additional jobs annually (see Table 25). These 548,900 total additional jobs by 2000 represent a 11.58 percent increase over 1985. Recalling that projections for population growth for the same period are about one percent, a reduced rate of unemployment and greater numbers of women in the workforce should result from these new job opportunities. Again, as Table 25 shows, growth in numbers of new jobs are predicted for those areas which traditionally require a baccalaureate degree. Conversely, the loss of 136,860 manufacturing jobs may cause individuals who lose jobs or who cannot secure alternate employment in Pennsylvania's mills and factories, to consider a college education.

Table 25
Projected Pennsylvania Wage and Salary Employment by Industry
Annual Average: 1985 and 2000

Industry Title	Estimated 1985 Employment	Projected 2000 Employment	Net Change	Percent Change	Annual Average Change
Total	4,739,100	5,288,000	548,900	11.58	36,593
Total Manufacturing	1,090,860	954,000	-136,860	-12.5	-13,686
Durable Goods	629,000	525,500	-103,500	-16.5	-10,350
Nondurable Goods	461,860	428,500	-33,360	-7.2	-3,336
Total Nonmanufacturing Industries	3,648,240	4,148,000	499,760	13.7	49,976
Mining	36,340	33,600	-2,740	-7.5	-274
Construction	189,600	209,000	19,400	10.2	1,940
Transportation and Public Utilities	239,600	245,500	5,900	2.5	590
Wholesale Trade	253,800	287,000	33,200	13.1	3,320
Retail Trade	815,680	933,200	117,520	14.4	11,752
Finance, Insurance and Real Estate	262,500	304,300	41,800	15.9	4,180
Services	1,171,120	1,448,440	277,280	23.7	27,728
Government	679,600	687,000	7,400	1.1	740
Source: Pennsylvania Office of Employment Security, Research and Statistics Division					

Comparing the projected numbers of new jobs with projected graduates of Pennsylvania's colleges and universities allows the Department of Labor and Industry to predict annual shortage or overage of college-trained job seekers. Areas where the supply of college and university graduates will not meet

Pennsylvania employment demands are reported in Table 26. Areas where supply of postsecondary graduates will exceed Pennsylvania employment demands are reported in Table 27.

Table 26
Annual Employee Shortages by Discipline

CIP Code	Discipline	Estimated Annual Employee Demand	Estimated Annual Institutional Supply	Discipline Annual Shortage
06.17	Real Estate, General	1,190	809	381
07.04	Office Supervision	3,726	281	3,445
08.04	Financial Services Marketing	1,218	9	1,209
08.09	Hospitality and Recreation Mgt.	13,256	540	12,716
09.02	Advertising	1,342	81	1,261
13.12	College and Univ. Faculty	2,212	N/A	N/A
18.11	Nursing	5,268	4,661	607
23.05	Writing and Editing	375	182	193
25.04	Library Science	768	214	554

Source: Pennsylvania Department of Labor and Industry. Labor Demand-Supply Relationship Component, Pennsylvania Occupational Information System, 1987

Note: CIP (Classification of Instructional Programs) codes are established by the U.S. Office of Education and are used by institutions of higher education to standardize names of academic and degree programs across all colleges and universities.

Table 27
Annual Employee Overages by Discipline

CIP Code	Discipline	Estimated Annual Employee Demand	Estimated Annual Institutional Supply	Annual Overage
04.03	City, community & Regional Planning	16	58	42
06.02	Accounting	1,514	3,518	2,004
06.04	Business Administration	7,451	13,625	6,174
06.07	Institutional Management	135	403	137
06.11	Labor/Industry Relations	146	283	123
07.01	Business and Office	7,664	12,763	5,099
09.01	Communication, General	16	722	706
09.04	Journalism Editing	95	566	452
09.07	Radio/Television, general	60	238	178
11.01	Computer & Information Sciences, General	2,083	8,888	6,805
14.00	Engineering	2,477	7,339	4,862
15.00	Engineering Technologies	2,127	5,866	3,739
17.01	Dental Services	635	1,075	440
19.01	Home Economics	195	635	440
23.00	Letters	375	2,504	2,129
42.01	Psychology, General	130	2,647	2,517
45.00	Social Sciences	98	5,699	5,601
50.00	Visual & Performing Arts	595	2,135	1,540

Source: Pennsylvania Department of Labor and Industry. Labor Demand-Supply Relationship Component, Pennsylvania Occupational Information System, 1987.

Public Commitment to Education

Citizen commitment to higher education--peaking in the 1980s--now has an uncertain future. In 1990 slightly more than 55 percent of all 20- to 29-year-olds had at least one year of college. Further, the number of U.S. citizens with four years of college or more increased from 10.7 percent in 1970 to 21.1 percent in 1990; hence, a family tradition of children going on to college is expected to increase. However, rising costs of higher education--made visible by much higher tuition charges--could increase public skepticism or call for increased intervention by government agencies during the 1990s. Increasing negative publicity about higher education finances and personnel policies may also create occasional lapses of public support.

Increasing social distances between those who attend institutions of higher education and those who are "educationally disadvantaged" could become a serious problem. Educationally-disadvantaged individuals will also be economically disadvantaged as the information age evolves. Failure to extend higher education opportunities could lead to social and political unrest, as well as lower the ability of the Commonwealth's work force and its quality of life. In the 1990's higher education may be expected to work more closely with public schools to remedy adult illiteracy, to be stronger partners in the quest for economic development, to increase the numbers of higher education participation, and to be more flexible in accommodating older, working, and returning students. These expectations may not necessarily fit into the mission of every college or university, however.

Unfortunately, the sharply increased number of citizens attending postsecondary education institutions is not paralleled by increasing numbers of graduates. Since 1970 the number of college degrees awarded in the United States has grown only by 18 percent (see Table 28).

TABLE 28
Earned Degrees in the U.S., by Level, 1971 to 1988

	Year			Percent Women	
Degree Designation	1971	1980	1988	1971	1988
Bachelor's	839,730	929,417	993,362	43	52
Master's	230,509	298,081	298,733	40	52
Doctorate	32,107	32,615	34,839	14	35

In summary, public commitment to higher education is expected to increase as greater numbers of the general population become college graduates, as second and third generations of families attend college, and as elected officials better represent public higher education (increasingly, more of them are public college graduates--but the process is a slow one). However, the strength and direction of public commitment may be linked to increased financial accountability and an avoidance of social unrest on

campuses similar to those observed in the 1960's and financial disclosures made public in the late 1980s.

Public response to Social Environments

Family structure, fertility, and the labor force are the most difficult social variables to predict. Rapidly changing job markets in the 1990s, a disproportionately large number of possible child-bearing couples (many of which have had children at later ages than preceding generations), and accelerating economic cycles require multiple predictions based upon differing assumptions. Some changes seem certain: an increased need for a technically-trained work force, a decrease in blue-collar jobs and agriculture, and increases in white-collar and service jobs. The increasing number of females entering the work force will, most likely, continue and at a faster pace than during the 1980 to 1990 era.

The average age of college attenders will continue to increase as the number of part-time, employed, and graduate students increases. Much of the increased enrollments of older, part-time students will be attributed to the "baby-boom" children who are reaching the traditional "mid-life crisis." Maturation of baby-boom children will:

- cause a surplus of mid-career workers
- make promotions difficult to obtain
- change cultural and entertainment preferences
- provide a generally older, more experienced market of higher education students
- produce a frustrated work force seeking retraining and advanced training as a means to improve career choices.

Not only are more adults attending college, those adults who are also parents are sending their children to school at younger ages. Working women, heavily dependent upon day care, are, in increasing numbers, enrolling pre-school children in schools. The percent of pre-school children enrolled in school has risen from 11 percent in 1965 to 39 percent in 1989. Prior research, including numerous studies of Project Headstart, consistently shows that pre-school programs are effective in raising academic abilities and success, though effects frequently are not measurable until fifth or sixth grade. More 5- and 6-year-old children are also enrolled in schools, showing that parents are taking advantage of educational experiences for their children at progressively early ages.

Affirmative Action

The State System of Higher Education has two primary goals regarding affirmative action: (1) to assist the underprepared or otherwise disadvantaged student to prepare for his or her college experience and to be successful as a student, and (2) to increase the participation of underrepresented students and employees in higher education, specifically targeting equity groups such as ethnic minorities, women, and those with special needs (veterans and the disabled or handicapped). Numbers of underrepresented students have increased since the late 1970's. Special developmental activities, mentoring programs, counseling opportunities, and other student services have been provided by State System universities in response to this diversified clientele.

A first step toward eliminating underrepresentation in higher education is increasing the numbers of minority students who complete high school. As seen in Table 29, minority students finish high school in fewer number than do whites (nationally). However, the gap is closing and a second trend of young adults returning to complete high school is emerging for whites and especially blacks.

Table 29
19-20- and 24-25-Year-Old Persons Who Completed High School by Race, 1974 to 1989

Year	Percent of Age Group			
	Total	White	Black	Hispanic
19-20-Year-Olds				
1974	79.1	84.6	65.7	58.8
1977	79.4	85.0	69.2	60.0
1980	80.8	85.5	71.1	51.2
1983	80.7	85.3	73.2	57.9
1986	82.9	87.8	74.9	65.8
1989	81.1	86.8	74.8	59.4
24-25-Year-Olds				
1974	84.1	88.2	73.8	56.0
1977	84.6	88.8	75.4	54.8
1980	84.9	87.7	74.3	54.9
1983	85.1	89.1	78.2	59.0
1986	86.2	89.3	83.5	62.6
1989	86.5	90.3	85.0	58.5

Source: U.S. Department of Commerce, Bureau of the Census, School Enrollment-Social and Economic Characteristics of Students. (Current Population Reports, Series P-20), October of identified years.

Minority students attend public colleges/universities in the U.S. by a margin of four to one over independent institutions. However, the only postsecondary institutions to enroll significantly higher numbers of minorities since 1980 have been the private, two-year (or less) institutions, sometimes referred to as proprietary schools.

As seen in Table 30, enrollment of black students in State System universities has increased by 444 (9 percent) since 1987 (the first year data for all races are available); this includes a decrease of 194 black students at Cheyney University. For the 13 traditionally white universities, black enrollment has increased 16 percent since 1987. Hispanic enrollments have increased each year, almost doubling to 844 in 1991. Total enrollment increased 12 percent during this time period; white enrollments increased 11 percent.

Table 30
Changes in Enrollments, by Race,
State System of Higher Education, Fall 1987 to Fall 1991

Race	1987	1988	1989	1990	1991
Black	4,831	4,716	5,244	5,417	5,275
Hispanic	464	546	646	746	844
White	82,409	85,883	88,253	91,158	91,218
Total*	89,500	92,375	96,368	99,082	99,850

*Total includes all other minority students and international students

Source: Student data tapes submitted by each university.

Two other trends bear further study: (1) enrollments at traditionally black institutions appear to be increasing as the 1990s begin and (2) the number of black faculty, especially those in the classroom, has been increasing very slightly since 1978. This latter situation will not soon change since the number of blacks receiving terminal degrees declined during the 1980s.

SUMMARY OF STUDENT MARKETS

Current Markets

Recent high school graduates remain the single-largest source of students for universities in the State System of Higher Education. Of the 129,514 Pennsylvania high school graduates in 1990, about 10 percent enrolled in System universities. Each year since 1983, System universities have enrolled between 13,000 and 14,000 first-time freshmen who are Pennsylvania residents. The reality of fewer high school graduates has been offset by an increasing postsecondary participation rate in Pennsylvania. Though the number of high school graduates fell from 160,329 in 1983 to 129,514 in 1990 (a decrease of 30,815 graduates or 19 percent), the college participation rate for those same years increased from 44 percent to 63 percent. This had the effect of supplying the same number of new postsecondary students (approximately 74,000) each year.

Counties with the lowest participation rates for State System universities (reference Table 31) generally exhibit a combination of low per capita income and greatest distance to the nearest State System university. A second reason for low participation rates in certain counties, especially the more urban ones, is close proximity to other institutions of higher education. Competition from other higher education institutions is particularly significant in three areas of the Commonwealth: the city of Philadelphia where only 5.4 percent of high school graduates enroll in a State System university (though this number has significantly increased from 2.9 percent in 1983), the area between Harrisburg and State College (about 6 percent of all graduates), and the Luzerne/Lackawanna Counties area (about 6.7 percent of all graduates).

Other, more difficult to measure, reasons for weak markets (System-wide):

- Increase in the number of high school graduates and older adults attending community colleges (in those counties where community college exist).
- Preference of part-time students to attend community colleges, proprietary schools, and urban universities.
- Geographic distance from concentrations of part-time graduate students.

Specific reasons for low participation rates (less than 10 percent, see Table 31) from particular counties include (in order of importance):

- Interaction effect between county per capita income and distance to the nearest State System university. Most counties below the state average participation are also below the state median per capital income, all are most distant from State System universities, most have higher rates of unemployment, and, with some exceptions, the lowest median costs of housing. The major exception, however, is Allegheny County--the single-largest provider of State System students (though only 9.0 percent of all county high school graduates enroll in the State System of Higher Education).

- Inability to attract students from urban centers. Only 5.4 percent of 1990 Philadelphia County high school graduates enrolled in State System universities; each percent gain would mean 158 more freshmen annually. Allegheny County high school graduates heavily attend five State System universities (California, Clarion, Edinboro, Indiana, and Slippery Rock). Each one percent gain from Allegheny County means 179 new freshmen. Other urban counties which have low System enrollments include Dauphin, Bucks, Cambria, Delaware, Montgomery, and York.

- Competition from other institutions of higher education in close geographic proximity. Three specific areas appear to be most prone to competition: Philadelphia County, Central Pennsylvania, and Luzerne/Lackawanna Counties. The Luzerne/Lackawanna area has 14 competing colleges (no System university), the Philadelphia metropolitan area has 79 competing institutions, and the Harrisburg-State College region is proximate to both the Capitol and main campuses of Penn State. Philadelphia, Luzerne County, and Harrisburg have community colleges.

Table 31

First-Time Freshmen Enrollments as a Percent of High School Graduates, by County, 1990
State System of Higher Education

County	Percent High School Graduates Enrolled	County	Percent High School Graduates Enrolled
Clarion*	34.8	Chester*	11.3
Venango*	27.5	Lehigh**	11.3
Clinton*	25.9	Northumberland	11.2
Crawford**	25.9	York	11.1
Indiana*	24.6	Snyder	11.0
Pike**	21.7	Westmoreland**	11.0
Monroe*	21.0	Schuylkill	10.5
Tioga*	20.7	Cumberland*	10.1
Jefferson**	19.9	Northampton**	9.8
Armstrong*	18.9	Somerset	9.7
Forest	18.6	Franklin	9.6
Monteur**	18.5	Huntingdon	9.6
Green**	18.3	Dauphin	9.5
Washington*	16.9	Adams	9.3
Union**	15.7	Fulton	9.2
Potter**	15.6	Allegheny	9.0
Bradford**	15.1	Bucks	8.8
Erie*	15.1	Wayne**	8.8
Elk*	15.1	Lebanon	8.6
Fayette**	14.9	Wyoming	8.6
Mercer**	14.6	Beaver	8.4
Warren**	14.0	Sullivan	8.3
Juniata	13.9	Blair	8.2
Berks*	13.8	Delaware	7.9
Lawrence**	13.8	Montgomery	7.9
Clearfield	13.5	Carbon**	7.3
Lycoming**	13.5	Susquehanna	7.1
Columbia*	13.0	Mifflin	7.0
Cambria**	12.5	Perry**	7.0
Cameron**	12.4	Lackawanna	6.9
Lancaster*	12.0	Luzerne	6.3
Butler*	12.0	Centre**	5.6
Bedford	11.9	Philadelphia**	5.4
McKean	11.8		

* Indicates a county with a State System campus
** Indicates a county adjacent to a State System campus

Of those approximately 74,000 high school graduates who continued to postsecondary education each year in the 1980s, the greatest proportion (37 percent) entered a public four-year university (State System or state-related). About 19 percent enrolled in an independent college/university in Pennsylvania, followed by 16 percent to community colleges, 6 percent to "other institutions" (seminaries, nursing schools, etc.), and 2 percent to private, two-year colleges. The remaining 19 percent left Pennsylvania to attend college.

Participation in public universities is among the lowest in Pennsylvania of all states. For instance, measured in number of residents per 1,000 per capita, 44 Delawareans, 41 West Virginians, 33 Ohioans,

32 Marylanders, and 24 New Yorkers attend public universities compared to 21 Pennsylvanians (the national average is 30). Conversely, 23 of every 1,000 Pennsylvanians are enrolled in an independent college compared to the national average of 14. Despite the rapid growth of college participation by high school graduates, total population enrollments remain low--58 residents per capita compared to the national average of 69.

The 129,514 high school graduates in 1990 represent a 3 percent annual decrease for the decade. This decrease will continue until spring 1994. The racial makeup of high school graduates has also remained stable: 8.4 percent black, 1.6 percent Asian, 1.3 percent Hispanic, and about 89 percent white. Mirroring the general population, most minority graduates originate from a few urban centers--66 percent of all Hispanic graduates originate in 5 counties: Berks, Lancaster, Lehigh, Northampton, and Philadelphia. Seventy-one percent of black graduates originate in 6 counties: Allegheny, Chester, Dauphin, Delaware, Montgomery, and Philadelphia. Though Hispanics and blacks originate in urban centers, these centers differ (except for Philadelphia).

Graduates of both public and nonpublic high schools have decreased since 1980. For public schools, graduates decreased from 146,458 in 1980 to 110,527 in 1990. Nonpublic schools for the same period experienced a drop from 24,188 graduates to 18,987. Public high schools in Pennsylvania produce 15 percent of all graduates. Allegheny County produced the most high school graduates in 1990 (13,580), followed by Philadelphia (12,740), Montgomery (7,987), Bucks (6,275), and Delaware (5,780). Allegheny and Philadelphia Counties provide about one-fifth of all Pennsylvania graduates. Each increase of one percent in the participation rate for these two counties produces about 300 additional freshmen for postsecondary education in the Commonwealth.

The decrease of high school graduates is due to fewer black and white students. White high school graduates decreased 21 percent from 1983 to 1990 (144,496 to 114,740). For the same period of time, black graduates decreased 16 percent, from 13,051 to 10,907. Hispanic graduates increased by 124 (1,595 in 1983 to 1,719 in 1990), Asians rose from 1,119 to 2,068 (85 percent increase), and Native Americans increased by 12 (68 to 80). Taken together, the number of non-white high school graduates decreased between 1983 and 1990 by 1,059 (7 percent).

Future Markets

State System of Higher Education enrollments can be categorized into 3 major groups: recent high school graduates (about two-thirds of all students), transfer students (about 20 percent of total enrollments), and other students (about 10 percent of total) who return to the university after an absence of several years or who begin college after the age of 25 years. The number of potential applicants in all three groups will increase during the 1990s. After a decade of hearing about the coming decline in the number of high school graduates, it is time to quickly shift gears. The late 1990s and early 2000s could bring a significant increase in the number of graduates. In 1991-92, there were 126,769 high school seniors in Pennsylvania, of which about 120,000 graduated in the spring of 1991. Taking the actual population of the other grades in 1991-92, and counting ahead to the normal graduation year for each grade, yields a potential number of high school graduates through the year 2003. Of course, these numbers (shown in Table 32) must be adjusted downward for student outmigration and attrition. Because these rates differ by county, school populations for each county are included for possible calculations by university serving area. Estimating future enrollments is difficult because of the significant effects of important assumptions:

- the participation rate of each class must be estimated
- employment options vs. college attendance must be forecast
- the effects of future public policy--especially financial aid and military (or mandatory public) service.

TABLE 32

ENROLLMENTS BY COUNTY AND GRADES
COMMONWEALTH OF PENNSYLVANIA
PROJECTIONS OF COLLEGE ENROLLMENTS, 1991 TO 2003

COUNTY	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	PERCENT CHANGE 1991-97	PERCENT CHANGE 1991-03	PERCENT CHANGE 1997-03
ADAMS	938	932	989	1,035	1,039	1,019	1,065	1,009	1,149	1,129	1,153	1,128	1,176	13.5%	25.4%	10.4%
ALLEGHENY	12,824	12,890	13,721	14,332	14,197	14,450	14,727	15,102	15,588	16,084	16,390	17,228	17,721	14.8%	38.2%	20.3%
ARMSTRONG	911	1,012	1,022	959	957	1,049	1,021	1,092	1,069	1,048	1,065	1,065	1,013	12.1%	11.2%	-0.8%
BEAVER	2,089	2,028	2,348	2,359	2,256	2,326	2,415	2,302	2,417	2,540	2,443	2,445	2,384	15.6%	14.1%	-1.3%
BEDFORD	665	673	604	631	723	657	696	693	727	665	649	679	644	4.7%	-3.2%	-7.5%
BERKS	3,714	3,921	4,059	4,128	4,118	4,336	4,483	4,583	4,636	4,708	4,765	5,065	5,333	20.7%	43.6%	19.0%
BLAIR	1,589	1,688	1,808	1,754	1,747	1,929	1,848	1,883	1,910	1,829	1,805	1,866	1,755	16.3%	10.4%	-5.0%
BRADFORD	813	828	923	943	950	1,014	966	986	995	1,029	1,016	1,031	996	18.8%	22.5%	3.1%
BUCKS	6,401	6,680	6,827	7,349	7,243	7,529	7,205	7,268	7,541	7,763	7,772	8,280	8,535	12.6%	33.3%	18.5%
BUTLER	1,735	1,781	1,781	1,879	1,944	1,944	2,008	1,958	2,057	2,134	2,057	2,130	2,069	15.7%	19.3%	3.0%
CAMBRIA	2,045	2,118	2,089	2,127	2,153	2,183	2,124	2,097	2,030	2,062	2,000	2,147	2,010	3.9%	-1.7%	-5.4%
CAMERON	88	80	79	71	59	70	75	82	82	93	82	116	91	-14.8%	3.4%	21.3%
CARBON	539	599	641	663	635	681	756	700	758	730	782	762	738	40.3%	36.9%	-2.4%
CENTRE	985	970	934	929	1,016	1,048	987	1,101	1,087	1,164	1,163	1,250	1,248	0.2%	26.7%	26.4%
CHESTER	4,212	4,284	4,375	4,644	4,586	4,554	4,739	4,763	5,007	5,207	5,215	5,663	5,788	12.5%	37.4%	22.1%
CLARION	615	604	626	603	635	707	651	696	648	688	639	706	656	5.9%	6.7%	0.8%
CLEARFIELD	1,197	1,249	1,169	1,447	1,382	1,356	1,304	1,404	1,365	1,323	1,336	1,298	1,265	8.9%	5.7%	-3.0%
CLINTON	449	430	459	443	464	532	520	511	484	487	496	450	490	15.8%	9.1%	-5.8%
COLUMBIA	836	806	868	861	845	910	910	966	936	941	945	945	880	8.9%	5.3%	-3.3%
CRAWFORD	904	923	889	900	944	1,039	1,038	1,034	992	1,047	1,079	1,033	1,004	14.8%	11.1%	-3.3%
CUMBERLAND	2,600	2,587	2,684	2,747	2,782	2,681	2,773	2,773	2,824	2,780	2,986	2,933	2,902	6.7%	11.6%	4.7%
DAUPHIN	2,582	2,632	2,754	3,027	2,881	2,945	3,200	3,105	3,198	3,170	3,325	3,432	4,148	23.9%	60.7%	29.6%
DELAWARE	5,538	5,477	5,837	6,102	6,132	6,249	6,697	6,604	6,482	6,768	7,020	7,536	7,357	20.9%	32.8%	9.9%
ELK	448	438	445	433	442	423	515	464	510	460	486	536	475	15.0%	6.0%	-7.8%
ERIE	3,440	3,370	3,682	3,725	3,759	3,848	3,949	4,076	3,984	4,118	4,208	4,443	4,505	14.8%	31.0%	14.1%
FAYETTE	1,652	1,641	1,676	1,875	1,975	1,990	1,812	1,881	1,836	1,948	1,857	1,928	1,927	9.7%	16.6%	6.3%
FOREST	119	115	79	64	54	73	60	53	54	67	60	70	58	-49.6%	-51.3%	-3.3%
FRANKLIN	1,463	1,522	1,615	1,510	1,495	1,519	1,503	1,526	1,510	1,510	1,535	1,521	1,492	2.7%	2.0%	-0.7%
FULTON	185	170	205	204	221	212	195	207	193	191	195	207	196	5.4%	5.9%	0.5%
GREENE	491	522	547	527	583	605	535	546	524	497	524	564	539	9.0%	9.8%	0.7%
HUNTINGDON	537	545	545	546	542	532	512	538	520	498	547	526	543	-4.7%	1.1%	6.1%
INDIANA	1,116	1,107	1,071	1,118	1,123	1,170	1,168	1,166	1,170	1,171	1,146	1,134	1,112	4.7%	-0.4%	-4.8%
JEFFERSON	575	633	626	590	594	606	573	633	554	577	650	599	571	-0.3%	-0.7%	-0.3%
JUNIATA	227	216	244	257	274	283	274	309	301	287	282	284	279	20.7%	22.9%	1.8%
LACKAWANNA	2,286	2,444	2,542	2,538	2,451	2,563	2,520	2,386	2,438	2,441	2,622	2,754	3,253	10.2%	42.3%	29.1%
LANCASTER	4,304	4,573	4,922	4,944	5,451	5,868	5,901	5,955	6,020	6,133	6,236	6,614	6,148	37.1%	42.8%	4.2%
LAWRENCE	1,135	1,047	1,189	1,133	1,248	1,289	1,351	1,356	1,262	1,297	1,340	1,351	1,294	19.0%	14.0%	-4.2%
LEBANON	1,313	1,342	1,339	1,356	1,413	1,439	1,464	1,451	1,525	1,562	1,527	1,712	1,399	11.5%	6.5%	-4.4%
LEHIGH	2,907	2,922	3,077	3,146	3,237	3,256	3,363	3,368	3,556	3,548	3,507	3,743	4,024	15.7%	38.4%	19.7%
LUZERNE	3,362	3,412	3,606	3,674	3,641	3,810	3,779	3,797	3,727	3,894	3,827	3,955	4,046	12.4%	20.3%	7.1%
LYCOMING	1,340	1,364	1,500	1,532	1,512	1,599	1,664	1,673	1,720	1,715	1,712	1,740	1,710	24.2%	27.6%	2.8%
MCLEAN	654	659	634	634	684	649	687	698	688	597	690	653	650	5.0%	-0.6%	-5.4%
MERCER	1,486	1,472	1,545	1,636	1,564	1,586	1,536	1,635	1,628	1,651	1,688	1,572	1,525	3.4%	2.6%	-0.7%
MIFFLIN	515	487	473	504	550	549	574	580	591	560	592	628	548	11.5%	6.4%	-4.5%
MONROE	1,073	1,180	1,272	1,340	1,364	1,404	1,398	1,445	1,430	1,499	1,507	1,563	1,645	30.3%	53.3%	17.7%
MONTGOMERY	7,592	7,908	8,041	8,256	7,784	7,934	8,237	8,207	8,590	8,796	8,997	9,688	10,326	8.5%	36.0%	25.4%
MONTOUR	176	166	180	206	249	218	231	241	241	253	259	262	222	31.3%	26.1%	-3.9%
NORTHAMPTON	2,709	2,728	3,044	3,198	3,096	3,175	3,221	3,376	3,388	3,399	3,463	3,548	3,610	18.9%	33.3%	12.1%
NORTHUMBERLAND	1,127	1,177	1,204	1,252	1,197	1,234	1,248	1,286	1,260	1,248	1,280	1,313	1,357	10.7%	20.4%	8.7%
PERRY	506	609	555	664	597	635	674	626	649	622	606	603	597	33.2%	18.0%	-11.4%
PHILADELPHIA	12,576	14,832	17,494	23,353	17,931	19,246	20,463	19,878	21,571	22,918	23,356	25,995	20,228	62.7%	60.8%	-1.1%
PIKE	164	164	191	224	171	222	240	253	254	263	281	303	291	46.3%	77.4%	21.3%
POTTER	232	236	224	241	250	264	274	254	259	266	264	258	312	18.1%	34.5%	13.9%
SCHUYKILL	1,642	1,587	1,661	1,684	1,721	1,790	1,754	1,808	1,774	1,843	1,803	1,840	1,999	6.8%	21.7%	14.0%
SNYDER	429	400	415	453	444	472	435	382	455	452	514	511	476	1.4%	11.0%	9.4%

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TABLE 32 - continued

ENROLLMENTS BY COUNTY AND GRADES
COMMONWEALTH OF PENNSYLVANIA
PROJECTIONS OF COLLEGE ENROLLMENTS, 1991 TO 2003

COUNTY	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	PERCENT CHANGE 1991-97	PERCENT CHANGE 1991-03	PERCENT CHANGE 1997-03
SOMERSET	1,003	1,008	1,017	1,085	1,137	1,147	1,138	1,143	1,154	1,087	1,119	1,075	1,042	13.5%	3.9%	-8.4%
SULLIVAN	65	87	74	79	67	71	91	87	87	65	84	71	72	40.0%	10.8%	-20.9%
SUSQUEHANNA	569	501	556	637	632	660	699	663	684	720	683	711	703	22.8%	23.6%	0.6%
TIOGA	511	569	553	543	579	593	560	605	615	598	610	636	608	9.6%	19.0%	8.6%
UNION	311	291	286	311	327	392	345	381	346	374	386	436	385	10.9%	23.8%	11.6%
VENANGO	827	835	934	931	952	1,007	971	927	889	921	963	996	1,137	17.4%	37.5%	17.1%
WARREN	493	520	521	539	543	581	593	599	592	618	599	592	563	20.3%	14.2%	-5.1%
WASHINGTON	2,328	2,403	2,467	2,507	2,449	2,564	2,470	2,528	2,499	2,569	2,527	2,572	2,568	6.1%	10.3%	4.0%
WAYNE	513	502	542	620	631	658	648	683	738	687	661	706	687	26.3%	33.9%	6.0%
WESTMORELAND	4,307	4,383	4,494	4,503	4,710	4,633	4,650	4,642	4,646	4,760	4,505	4,500	5,383	8.0%	25.0%	15.8%
WYOMING	346	360	418	389	406	391	383	385	375	359	391	445	440	10.7%	27.2%	14.9%
YORK	3,446	3,526	3,738	3,875	3,846	3,941	3,946	4,037	4,124	4,166	4,335	4,648	4,621	14.5%	34.1%	17.1%
TOTALS	126,769	131,165	138,929	148,769	143,584	148,309	150,812	151,446	154,913	158,594	160,607	168,994	165,769	19.0%	30.8%	9.9%

SOURCE: PENN DEPT OF EDUCATION

Nevertheless, one fact seems clear--there will be many more high school graduates after 1992 than during the end of the 1980s. The 25 percent reduction of Pennsylvania high school graduates since 1983 should be fully restored by about 2002. If the participation rate remains at 63 percent, there will be 26,000 more high school graduates annually going to college in 2002 than in 1990. Clearly, if public universities are turning away many students in 1992, the pressure to admit about 30 percent more high school graduates will be enormous. Worse, because it takes so much time to provide staff and infrastructure for increases of this magnitude, the opportunity to do so may have already passed.

Should these increases materialize, the following would be true:

- By 1993, Philadelphia will surpass Allegheny County as the single-largest producer of high school graduates--a status which would remain constant through the next decade.

- The largest increases in number of graduates will occur in the most urban areas of the Commonwealth (there are presently 61 percent more kindergartners than seniors in Philadelphia; for Allegheny County the increase is 38 percent). Other major urban areas with large increases include Berks (44 percent), Bucks (33 percent), Chester (37 percent), Dauphin (61 percent), Delaware (33 percent), Erie (31 percent), Lackawanna (42 percent), Lancaster (43 percent), Lehigh (38 percent), Montgomery (36 percent), Westmoreland (25 percent), and York (34 percent) Counties.

- Many rural counties may have fewer high school graduates in 2003 than in 1991, including Bedford, Cambria, Cameron, Clarion, Clearfield, Elk, Franklin, Fulton, Huntingdon, Indiana, Jefferson, McLean, Mercer, Mifflin, and Somerset Counties.

Two important points follow from Table 32. First, those rural areas of Pennsylvania which do not presently have an institution of higher education cannot use population growth to strengthen arguments for location of additional sites or branch campuses. Second, the serving areas of State System universities as they existed in the 1980s will, most likely, expand in the next decade as high school graduates from rural areas remain constant or decrease, while the number of graduates from urban areas (but not core cities) will increase significantly.

Nationally (see Table 33), between 1990-91 and 2001-02, the number of elementary students (aged 5-13) will increase by 4 million (+11 percent). The number of secondary school students will increase by 2,500,000 (+19 percent). The U.S. Department of Education estimates that the number of elementary teachers and secondary teachers will need to grow by 1,000,000 by 2001 to serve these growing enrollments.

Higher education is expected to grow by 2 million students in the next decade. This growth is forecast to include 400,000 additional students aged 19 or less, 400,000 additional students aged 20-21, and 800,000 aged 22-24. The number of students aged 25 to 34 will decrease by 300,000, but college students over the age of 35 will increase by 1.1 million, a 43 percent increase over 1990.

TABLE 33
PROJECTIONS
1979-80 to 2001-2002

Characteristic	1979-80	1990-91 (Estimate)	2001-2002 (Projected)	Percent Change 1979-80 to 1990-91	Percent Change 1990-91 to 2001-2002
Population[1] (Numbers in thousands)					
5-13 years old	31,431	32,527	36,200	3	11
14-17 years old	16,611	13,290	15,790	-20	19
18 years old	4,316	3,509	3,843	-19	10
18-24 years old	30,048	26,350	25,734	-12	-2
25-29 years old	19,178	21,675	17,848	13	-18
30-34 years old	17,025	22,506	19,988	32	-11
35-44 years old	25,176	37,965	44,199	51	16
Elementary/secondary education (Numbers in thousands)					
Enrollment					
Total	46,645	46,221	52,679	-1	14
Public	41,645	41,026	46,782	-1	14
Private	5,000	5,195	5,897	4	14
Kindgergarden - grade 8	31,631	33,808	37,707	7	12
Public	27,931	29,742	33,172	6	12
Private	3,700	4,066	4,535	10	12

TABLE 33 - continued
PROJECTIONS
1979-80 to 2001-2002

Elementary/secondary education - continued
(Numbers in thousands)

Characteristic	1979-80	1990-91 (Estimate)	2001-2002 (Projected)	Percent Change 1979-80 to 1990-91	Percent Change 1990-91 to 2001-2002
Grades 9-12	15,014	12,413	14,972	-17	21
Public	13,714	11,284	13,610	-18	21
Private	1,300	1,129	1,362	-13	21
High school graduates					
Total	3,043	2,465	2,882	-19	17
Public	2,748	2,210	2,548	-20	17
Private	295	255	298	-14	17
Classroom teachers					
Total	2,459	2,744	3,217	12	17
Public	2,183	2,391	2,805	10	17
Private	276	353	412	28	17
Elementary	1,378	1,632	1,884	18	15
Public	1,190	1,379	1,592	16	15
Private	188	253	292	35	15
Secondary	1,081	1,112	1,333	3	20

TABLE 33 - continued
PROJECTIONS
1979-80 to 2001-2002

Characteristic	1979-80	1990-91 (Estimate)	2001-2002 Projected	Percent Change 1979-80 to 1990-91	Percent Change 1990-91 to 2001-2002
Public	993	1,012	1,213	2	20
Private	88	100	120	14	20
Pupil/teacher ratios[2]	**(In units)**				
Public					
Elementary	20.9	18.6	17.7	-	-
Secondary	16.9	15.2	15.3	-	-
Private					
Elementary	19.7	16.1	15.5	-	-
Secondary	14,8	11.3	11.4	-	-
Expenditures	**(Billions of constant 1979-90 dollars)**				
current expenditures in public schools[3]	$142.4	$188.1	$257.7	32	37
Current expenditure per pupil in average daily attendance in public schools	$3,719	$4,953	$5,951	33	20
Average annual salaries for teachers in public schools	$26,141	$31,204	$36,675	19	18

TABLE 33 - continued PROJECTIONS 1979-80 TO 2001-2002					
Characteristic	**1979-80**	**1990-91 (Estimate)**	**2001-2002 (Projected)**	**Percent Change 1979-80 to 1990-91**	**Percent Change 1990-91 to 2001-2002**
Enrollment	**Higher Education (Numbers in thousands)**				
Total	11,570	13,931	15,865	20	14
Control of institution					
Public	9,037	10,844	12,355	20	14
Private	2,533	3,087	3,510	22	14
Type of insitution					
4-year	7,353	8,738	9,927	19	14
2-year	4,217	5,193	5,938	23	14
Sex of student					
Men	5,683	6,419	6,991	13	9
Women	5,887	7,512	8,874	28	18
Age[4]					
19 years and under	3,016	3,166	3,511	5	11
20-21 years old	2,280	2,553	2,987	12	17
22-24 years old	1,821	2,126	2,421	17	14
25-29 years old	1,801	2,073	1,894	15	-9
30-34 years old	1,096	1,406	1,325	28	-6
35 years and over	1,557	2,605	3,730	67	43

TABLE 33 - continued
PROJECTIONS
1979-80 to 2001-2002

Characteristic	1979-80	1990-91 (Estimate)	2001-2002 (Projected)	Percent Change 1979-80 to 1990-91	Percent Change 1990-91 to 2001-2002
Attendance status					
Full-time	6,794	7,828	8,906	15	14
Part-time	4,776	6,103	6,959	28	14
Level					
Undergraduate	9,998	11,969	13,598	20	14
Graduate	1,309	1,662	1,915	27	15
First-professional	263	300	352	14	17
Full-time-equivalent	8,487	10,033	11,418	18	14
Earned degrees					
Associate	401	470	539	17	15
Men	184	200	219	9	10
Women	217	270	320	24	19
Bachelor's	929	1,064	1,189	14	12
Men	474	492	528	4	7
Women	456	572	661	25	16
Master's	298	327	383	10	17
Men	151	150	184	(*)	23
Women	147	177	199	20	12

TABLE 33 - continued
PROJECTIONS
1979-80 to 2001-2002

Characteristic	1979-80	1990-91 (Estimate)	2001-2002 (Projected)	Percent Change 1979-80 to 1990-91	Percent Change 1990-91 to 2001-2002
Doctor's	33	39	41	19	7
Men	23	24	22	5	-7
Women	10	15	19	50	31
First-professional	70	74	94	5	28
Men	53	44	57	-16	29
Women	17	30	37	70	26

(*) Between -0.5 and 0.5

[1] Population projections are from the Series 18 population projection of the Bureau of the Census. Population data for 1990-91 are projected.

[2] Based on enrollment by organization level

[3] Exludes capital outlay and interest

[4] Data for 1979-80 are estimated.

NOTE: Because of rounding, details may not add to totals. Percentages based on unrounded numbers.

SUMMARY OF MAJOR TRENDS

Pennsylvania Demographics and Trends-

- 1990 population of Pennsylvania - 11,881,643 (fifth largest in U.S.)

- Population is growing slowly
  - increased 0.15 percent since 1980
  - at a slower rate than previously forecast
  - almost unchanged from 1970 to 1990
  - will increase by about 4,000 annually from 1990 to 2000

- Population migration from the Commonwealth is a continuing event
  - about 35,000 residents leave per year
  - 9 percent of the entire population of western Pennsylvania moved out between 1980 and 1990
  - Pennsylvania had 6 of the 25 counties in the U.S. that lost the most residents in the last decade: Allegheny, Philadelphia, Luzerne, Beaver, Westmoreland, and Cambria (in order)

- Migration within the Commonwealth is increasing
  - urban population decreased 4 percent since 1980; rural population increased by 1.4 percent
  - residents from the most rural and most urban parts of the state are moving to the suburbs (townships near metropolitan areas)
  - after growing for the past two decades, some rural areas lost almost 10 percent of total population 1980s, including Beaver, Cambria, Clearfield, Elk, Fayette, McKean, and Venango Counties.

- Pennsylvania still has the largest number of rural residents in the U.S.
  - total of 3,693,348 residents (up 1.4 percent from 1980; represents 31 percent of total population)
  - number of rural residents in Pennsylvania and U.S. has not grown significantly since 1940
  - Texas and/or North Carolina may surpass Pennsylvania in the 1990s

- 69 percent of Pennsylvania residents live in urban areas
  - Pennsylvania has two of the nation's 75 largest population areas: Philadelphia (12th largest) and Allegheny County (16th largest)
  - not one of Pennsylvania's 52 cities has a higher population in 1990 than 1960
  - loss of population in many cities in western Pennsylvania approaches 50 percent since the 1960s
  - only four cities have over 100,000 residents: Philadelphia, Pittsburgh, Erie, and Allentown
  - only six cities still have between 50,000 and 100,000 residents: Scranton, Reading, Bethlehem, Lancaster, Harrisburg, and Altoona

- Most of the Commonwealth's boroughs have lost population
  - those closest to cities have lost residents (Baldwin, Wilkinsburg, Norristown); those away from cities have grown since 1980 (Monroeville, Plum, and State College)

- Most population growth has been, and continues to be, in the Commonwealth's townships
  - 25 counties now have at least one township with a population exceeding 10,000
  - the 1990 census records 37 Pennsylvania cities with populations over 10,000 compared with 126 townships (five townships exceed 50,000)
  - many of the most populous counties have no cities, only townships and boroughs (Montgomery, Cumberland, and Bucks, for example)
  - much of the political power has been transferred from urban areas to townships

- Pennsylvania's minority population is growing, but at different rates
  - 1990 non-white population (1,361,442) is an increase of 12 percent from 1980; non-whites represent 11.5 percent of total population
  - the white population decreased by 132,119 (-1.24 percent)
  - fastest growing minority is Asian (113 percent increase from 1980; one percent of 1990 population)
  - the black population increased by 4 percent to 1,089,795
  - the Hispanic population increased by 51 percent since 1980; Hispanics now makeup 2 percent of total population
  - in 1990, Pennsylvania had a about half the number of minority residents (by percent) as did the neighboring states of New York, New Jersey, Delaware, and Maryland

- Pennsylvania's population is aging
  - median age climbed from 32 years in 1980 to 35 years in 1990
  - fastest growing group is over 85 years old
  - by 2000 over 25 percent of all Pennsylvanians will be over 60
  - only Florida has more residents over the age of 65 (Pennsylvania with 15.1 percent of total population over 65 is well above the national average of 12.5 percent)
  - the aging population is well organized and is well represented politically
  - the first "sandwich generation" (citizens simultaneously taking care of children and aging parents) will continue to grow in the 1990s

- 97 percent of all Pennsylvanians live in a household
  - 71 percent of all households are owner occupied
  - average size family for married couples is 3.10
  - 46 percent of all residents who live alone are over 65 years of age (78 percent are women)
  - nationally, half the families in the U.S. have no children or children living at home, only one family in ten has three or more children, one child is the most frequently reported family size, and average family size has dropped from 3.58 in 1970 to 3.16 in 1990

<u>Trends which will affect the State System of Higher Education in the 1990s</u> -

- Shift in Pennsylvania's population from urban centers to suburban areas (Suburban residents live closer to State System universities.)

- Shift in population from western Pennsylvania to eastern counties or other states (Most residents in western Pennsylvania attend public universities.)

- Increasing numbers of women attending college (Women tend to enroll in State System universities; the number of men students is up 12 percent since 1983 while the number of women students is up 31 percent. The 1991 student headcount enrollment is 18,326 above 1983; women represent three-quarters of this growth.)

- Increasing higher education participation rates in Pennsylvania (from 44 percent in 1983 to 63 percent in 1991, though it is unlikely participation will increase beyond 65 percent in the 1990s.)

- Renewed student interest in, and employer demand for, the four-year degree after two decades of explosive growth in two-year postsecondary institutions

- Increasing number of applications (especially transfer and returning students) by individuals over the age of 25 years

- Increasing numbers of applicants who desire part-time attendance

- The changing role of women (There are shifts away from traditional roles and traditional fields such as teaching, nursing, social work, and homemaking, toward business and the professional schools.)

- Renewed interest in graduate degree programs, especially by women

- Future employment needs match well current academic offerings in State System universities (Trends toward service jobs and advanced technology jobs, coupled with shortage in traditional State System programs such as nursing and teaching, indicate continuing or growing markets for current programs.)

- The number of women who will enter Pennsylvania's work force in the 1990s (and seek higher education to prepare for careers) will increase (Only five states have fewer women, by percent, in the workforce.)

- Number of single-person households will continue to grow (Fewer marriages, and sharp decreases in the number of children after marriage, allow more individuals to plan for college and enroll in academic programs beyond the traditional 18- to 22-year-old cohorts.)

- "Educationally disadvantaged" in the 1990's will signify the absence of postsecondary attendance and be equated with "economically disadvantaged"

- Pennsylvania has the largest rural population of the 50 states (Historically, higher education participation is lowest for individuals residing in rural areas.)

- Minority populations in Pennsylvania remain in core cities, the longest possible distance from State System universities (However, the Hispanic population is beginning to diversify locations across the Commonwealth.)

- College enrollment by men is not generally increasing and shows signs of decreasing in certain programs and levels (The number of men in graduate programs is especially decreasing nationally and in Pennsylvania.)

- Tuition charges and student fees at State System universities, while relatively low for Pennsylvania, remain third highest in the nation (1991-92) for undergraduate, public institutions

- Declining direct student aid and higher student fees have sharply increased student borrowing (In 1989-90, the State System senior who carried a Guaranteed Student Loan (GSL) had incurred an average debt of $6,840 up from $4,406 in 1980-81.)

- Low unemployment rates historically signal lower college enrollments (However, the availability of high paying manufacturing jobs in Pennsylvania is decreasing as unemployment has increased in the early 1990s. Historical trends may not hold for the next decade.)

- Increasingly, industry and business provides on-the-job training and formal academic studies for employees, tasks once reserved for higher education institutions (The ability of higher education and business to form partnerships, rather than compete for human resources, will play a role in college enrollments in the 1990's.)

- There will be significant increases in the number of high school graduates in Pennsylvania over the next ten years (This represents the single-largest potential for increased applications to State System universities.)

- Career plans are changing (From 1970 to 1990 large increases in technology, business, and computer science programs were recorded. At the same time the number of teacher education majors dropped by about two-thirds.)

- Federal expenditures for education are expected to decrease, returning the support burden to the states and institutions (This could lead to additional institutions of higher education in Pennsylvania seeking assistance from the Commonwealth, increasing competition for already insufficient resources.)

- Public commitment to higher education in Pennsylvania is expected to increase as family traditions of going to college are established (This is especially important to the State System of Higher Education as alumni increase their numbers in management and government.)

- Higher education will be expected to work more closely with public schools in the 1990s (Specifically, universities will be asked to help remedy adult illiteracy, to be stronger partners in the quest for economic development, and to be more flexible in accommodating older and returning students.)

OPERATING ENVIRONMENTS

Pennsylvania Environment

The State System of Higher Education, by mission, is intertwined with the complex operating environment of state government, commerce, and the perceived quality of life. The State System is, and will continue to be, an integral part of Pennsylvania's resources and infrastructure. Therefore, it is necessary to state first the environment forecast for the Commonwealth, to allow later analyses of State System of Higher Education environments, opportunities, and "fit" with the greater issues.

Threats and opportunities for the Commonwealth have been identified by the Pennsylvania State Planning Board:

Threats

- Declining shares of national product and wealth
- Lagging growth in total personal income and earnings
- Growing gap between resources of the rich and poor, and rural and inner city vs. suburban wealth
- Continued loss of manufacturing jobs
- Slow Pennsylvania growth in national rapid growth industries
- Continued large numbers of workers in recession-prone industries
- Continued high net outmigration, virtually no population growth between 1970 and 2000, and the aging of the present population
- Rising public service costs and shrinking tax bases
- Deteriorating housing in urban and rural centers, and growing needs for affordabe housing
- Changing migration patterns which may increase infrastructure costs and compound problems of distress in established urban and rural centers
- Lack of sufficient solid waste management and planning
- Decreasing water quality; need for improved water use management and maintenance of delivery infrastructure
- Increasing air pollution and problems associated with acid rain
- Rapidly increasing conversion of forests and farmland to commercial use

Opportunities

- Ideal location with respect to our nation's largest consuming markets and transportation to global markets
- Potential to penetrate new domestic markets for a wide range of products
- Large, untapped market potentials overseas
- Well-developed network of financial institutions
- Presence of many high-technology businesses
- A highly-skilled work force
- Good schools, colleges, and universities

- Enormous past investment in community infrastructure
- Population settlement pattern relatively evenly distributed across the state concentrated around established urban and rural centers
- Abundant amenity resources such as recreation and cultural facilities
- Diversified and well-developed transportation systems covering all transport modes
- Vast coal and other energy resources
- Scenic beauty and pleasant environment

Operating Environments for the State System of Higher Education

The State System of Higher Education, as one of the Commonwealth's most important and largest resources, will be greatly affected by the larger threats and opportunities to the state. Threats of an economic nature can mean less support and resources for the State System while pressure increases to contribute to economic recovery; however, the opportunity to play a major role in the Commonwealth's economic revival and development remains great.

Given the historic mission of these public universities, the following threats and opportunities, directly linked to those of the Commonwealth, are identified for the State System of Higher Education:

Strengths

- Geographic access to most Pennsylvania residents. The System's 14 universities are within 50 miles of almost all Pennsylvanians.
- About 75 percent of State System graduates remain in Pennsylvania after graduation (military service and out-of-state graduate schools attract half those students who do leave).
- State System tuition and room/board fees are the lowest of all four-year colleges/universities in Pennsylvania and the lowest of all two-year institutions except community colleges.
- Enhancement of quality of life in Pennsylvania, in university communities and elsewhere, because of impact on civic awareness and participation, artistic and cultural life, libraries and other special resources--all of which are important in attracting and retaining an educated, entrepreneurial, and productive citizenry. In addition to serving students, System universities play host to the general public; each year almost 400,000 members of the general public attend athletic events, 125,000 attend cultural events, 51,000 alumni visit, 98,000 prospective students visit, 201,000 attend conferences and seminars, and another 230,000 visit for a variety of other functions.

Opportunities

- Ability to significantly increase the educational level of Pennsylvania's work force because State System graduates remain in Pennsylvania after graduation.
- Organizing as a system, the 14 universities can offer an economy of scale for Commonwealth goal achievement and economic efficiencies within the State System.

- Being state-owned, the universities are accountable to the citizens of Pennsylvania and responsive to Commonwealth needs and public aspirations.

- State System universities, being multi-purpose, offer a complete range of undergraduate and graduate majors and degree programs.

- Universities in the State System maintain relatively low student/faculty ratios, averaging about 18 students for each faculty member.

- The universities have historic ties and strong educational traditions in their serving regions.

- The geographic locations of the universities and diversification of programs are designed to serve local needs and address Commonwealth goals.

Threats

- Economic conditions, including the tax structure and competing needs for public funds, make it difficult for the Commonwealth to adequately fund state-owned institutions. Public concerns with basic education (and its financing), public safety and corrections, and health and welfare care for the elderly and children may all supersede the importance of higher education in the 1990s.

- Tuition charges to students will continue to be directly related to the Commonwealth appropriation to the State System of Higher Education. The 1990's may mark the third decade of raising tuitions to cover costs not addressed by the state appropriation.

- During the 1980s Commonwealth funding, though inadequate, was relatively stable and incremental. The 1990s have provided mid-year cuts in amounts appropriated to the State System and budgets have recommended further cuts in appropriations. Future appropriations cannot be predicted--at least for the early 1990s.

- Declining appropriations to the State System, despite growing enrollments, cause higher levels of tuition; higher tuitions negatively affect the opportunity to attend public universities or cause families to dismiss college as too expensive.

- Growth in administrative/regulatory costs (health care and other fringe benefits, "right-to-know," safety regulations, financial aid reviews, etc.).

- Difficulty for most universities in the State System of Higher Education to absorb increased higher education participation rates (or present participation rates with increased numbers of high school graduates); most are filled to capacity, restricted from higher enrollments by lack of physical facilities. There is no public policy or plan in Pennsylvania to accommodate a larger number of college students through additional funding or facilities.

Weaknesses

- No long-term solution to increasing deferred maintenance problems and other infrastructure maintenance.

- A continuing tendency to view the State System of Higher Education as a public utility rather than an academic enterprise and autonomous university system.

- An evolving "track record" for the State System. Data bases, policies, and administrative precedents are evolving; legislative liaison, alumni coordination, and public recognition are still in an infancy stage.

- Distance of System universities from urban areas with major markets for part-time students.

- Numbers of students enrolling in State System universities vary by geographic area. High percents of high school graduates from rural counties enroll in State System universities in direct relationship to distance from the nearest System campus. Three areas provide few System enrollments: Philadelphia County, Luzerne/Lackawanna Counties, and the area between Harrisburg and State College.

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